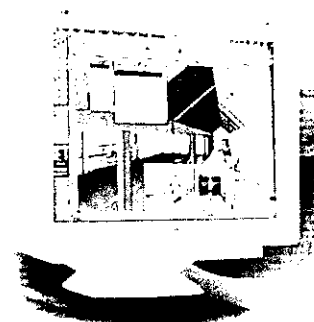


Service
Service
Service



MODEL : V30 107T50/00
107T51/00

Service Manual

Horizontal frequencies
30 - 71 KHz

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SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES



PHILIPS

Important Safety Notice

Go to cover page

Proper service and repair is important to the safe, reliable operation of all PHILIPS Consumer Electronics Company** Equipment. The service procedures recommended by PHILIPS and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. PHILIPS could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, PHILIPS has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by PHILIPS must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

** Hereafter throughout this manual, PHILIPS Consumer Electronics Company will be referred to as PHILIPS.

WARNING

Critical components having special safety characteristics are identified with a  by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol  on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

* Broken Line 

FOR PRODUCTS CONTAINING LASER :

DANGER- Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.

CAUTION- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION- The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Technical Data

Go to cover page

Technical Specification*

Dimensions : 17 inch
Pitch : 0.25
Deflection angle : 90 degrees
Glass : dark
Light transmission : 50%(CPT), 52.8%(LG), 52.6%(SDI).
Surface : AGARAS
Implosion protection : CRT is provided with P-mini-rim-band.
Black matrix : Yes
Phosphor : P22
EHT : 25 KV (lb=0)
CRT source : CPT, LG, SDI

Scanning
Horizontal scanning : 30 - 71 KHz
Vertical scanning : 50 - 160 Hz

Input signals
Video : Analog level
Sync. : Separate sync. with TTL level
Polarity : Positive or negative

Signal input level
Video : 0.7 Vp-p 75 ohms
Sync : TTL level

Impedance
Video : Terminated with 75 ohms
Sync : Terminated with 4.7K ohms pull down resistors

Video amplifiers
Dot Rate : 108 Mhz

Operating limits
Temperature : 0C to 40C
Humidity : 10 to 90% (W/O condensation)
Air pressure : 700 - 1100 mbar

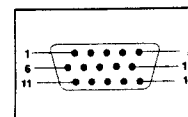
Non-operating limits (storage)
Temperature : -25C to 65C
Humidity : 5 to 95 % (W/O condensation)
Altitude : 300 to 1100 mbar

Carton box
A-1 Size (with pedestal)
496(W)416(H)556(D)
A-2 Carton paper : double wall AB flute corrugate board, color brown
Bursting : 19.3 kgf/cm² min
Compression : 600 kgf min

White color adjustment
Based on the 1931 CIE chromatic diagram (x,y) coordinates of white display on screen center should be:

For 9300 K X = 0.283 0.015 Y = 0.297 0.015
For 6500 K X = 0.313 0.015 Y = 0.329 0.015
For sRGB X = 0.313 0.015 Y = 0.329 0.015

Pin assignment :



The 15-pin D-sub connector(male) of the signal cable :

Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	+5V DDC
2	Green video input	10	Gnd
3	Blue video input	11	Gnd
4	Gnd	12	Bidirectional Data
5	For self-test	13	H.Sync /H
6	Red video ground	14	V.Sync(VCLK for DDC)
7	Green video ground	15	Data clock line(SCL)
8	Blue video ground		

Data Storage

Factory preset modes:

This monitor has 8 factory-preset modes as indicated in the

Factory preset modes : 8

	Resolution	H. freq.	V. freq.	H.	V.
1.	720 x 400	31.5 KHz	70Hz (VGA)	-	+
2.	640 x 480	31.47 KHz	60Hz (VGA)	-	-
3.	640 x 480	43.3 KHz	85Hz (VESA)	-	-
4.	800 x 600	46.9 KHz	75Hz (VESA)	+	+
5.	800 x 600	53.674KHz	85Hz (VESA)	+	+
6.	1024 x 768	60.0 KHz	75Hz (VESA)	+	+
7.	1024 x 768	68.7 KHz	85Hz (VESA)	+	+
8.	1280 x 1024	64.0 KHz	60Hz (VESA)	+	+

Automatic Power Saving

	Signal			Compliance Requirement	Power
	H-Sync	V-Sync	Video		
On	Active	Active	Active	Mandatory	<= 75w
Off	Inactive	Active	Blanked	Mandatory	<= 2 w
Off	Active	Inactive	Blanked	Mandatory	<= 2 w
Off	Inactive	Inactive	Blanked	Mandatory	<= 2 w

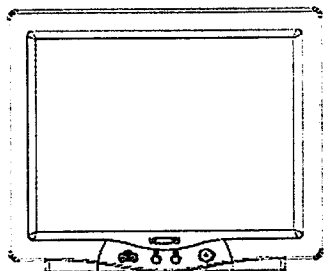
This monitor is ENERGY STAR[®] compliant.

this product meets the ENERGY STAR[®] guidelines for energy Efficiency



ENERGY STAR[®] is a U.S. registered mark. AS AN ENERGY STAR PARTNER, DELL Computer Corporation HAS DETERMINED THAT THIS PRODUCT MEETS THE ENERGY STAR GUIDELINES FOR ENERGY EFFICIENCY.

Front view



107F5/T5



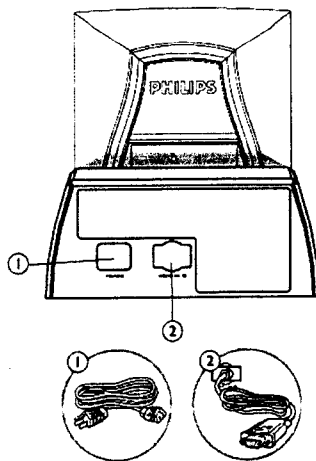
Front control



- ⓘ Power button switches your monitor on.
- ⓘ OK button which when pressed will take you to the OSD controls
- ⓘ Contrast hotkey. When the "+" button is pressed, the adjustment controls for the CONTRAST will show up.
- ⓘ Brightness hotkey. When the "-" button is pressed, the adjustment controls for BRIGHTNESS will show up.
- ⓘ "-" and "+" buttons, are used for adjusting the OSD of your Monitor.
- ⓘ LightFrame hotkey. When the button is pressed, the adjustment controls for LightFrame will show up.

Front control & OSD

Rear view



1. Power in - attach power cable here.
2. Video In - this is a cable which is already attached to your monitor. Connect the other end of the cable to your PC.

Description of the On Screen Display

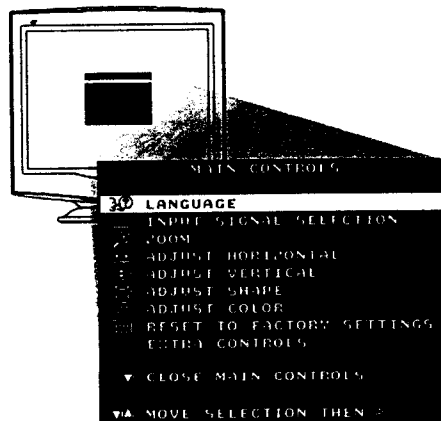
What is the On-Screen Display?

This is a feature in all Philips monitors which allows an end-user to adjust screen performance of monitors directly through an on-screen instruction window. The user interface provides user-friendliness and ease-of-use when operating the monitor.

Basic and simple instruction on the control keys.

On the front controls of your monitor, once you press the button, the On Screen Display (OSD) Main Controls window will pop up and you can now start making adjustments to your monitor's various features.

Use the the keys to make your adjustments within.

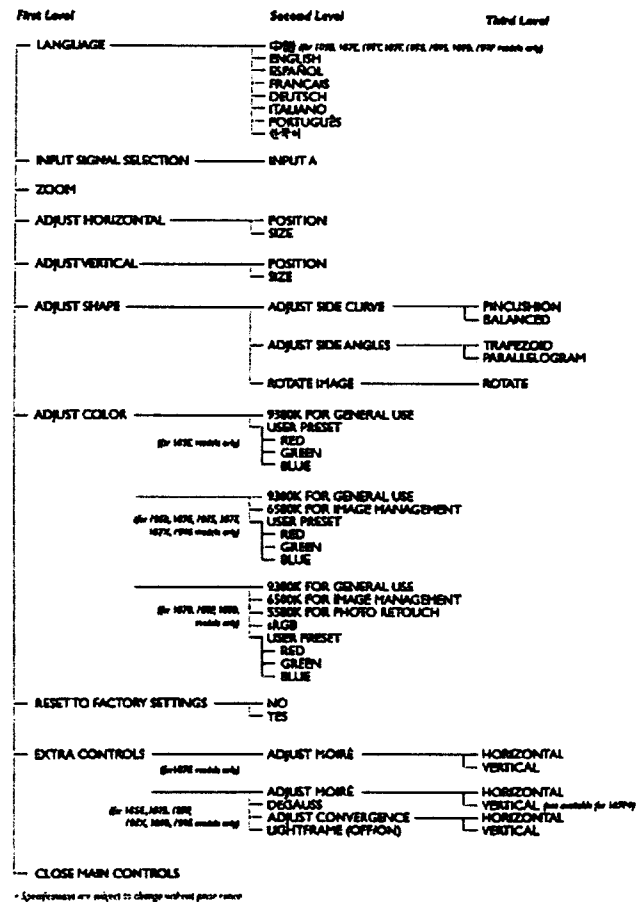


OSD menu tree

The OSD Tree

Below is an overall view of the structure of the On-Screen Display. You can use this as reference when you want to later on work your way around the different adjustments.

CRT OSD tree / English



* Specifications are subject to change without prior notice

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The OSD Controls

BRIGHTNESS

To adjust your screen's brightness, follow the steps below. Brightness is the overall intensity of the light coming from the screen. A 50% brightness is recommended.

- 1) Press the button on the monitor. The BRIGHTNESS window appears.



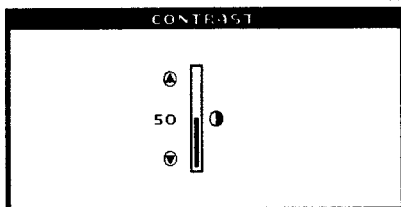
- 2) Press the or button to adjust the brightness.
- 3) When the brightness is adjusted to the level desired, stop pressing the or button and after three seconds the BRIGHTNESS window will disappear with the new adjustment saved.

Smart Help After the BRIGHTNESS window has disappeared, to continue to the CONTRAST window, follow the steps under CONTRAST.

CONTRAST

To adjust your screen's contrast, follow the steps below. Contrast is the difference between the light and dark areas on the screen. A 100% contrast is recommended.

- 1) Press the button on the monitor. The CONTRAST window appears.



- 2) Press the or button to adjust the contrast.
- 3) When the contrast is adjusted to the level desired, stop pressing the or button and after three seconds the CONTRAST window will disappear with the new adjustment saved.

Smart Help After the CONTRAST window has disappeared, to continue to the MAIN CONTROLS, follow the steps under LANGUAGE

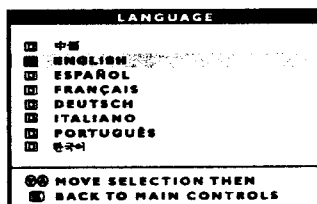
LANGUAGE

The ON SCREEN DISPLAY shows its settings in one of eight languages. The default is English, but you can select French, Spanish, German, Italian, Simplify-Chinese, Korea, Brazilian or Portuguese.

- 1) Press the button on the monitor. The MAIN CONTROLS window appears. LANGUAGE should be highlighted.
- 2) Press the button again. The LANGUAGE window appears.



- 3) Press the or button until the desired language is highlighted.



- 4) Press the button to confirm your selection and return to MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted...

Smart Help After returning to MAIN CONTROLS...

... to continue to INPUT SIGNAL SELECTION, press the button until INPUT SIGNAL SELECTION is highlighted. Next, follow steps 3 - 5 under INPUT SIGNAL SELECTION.

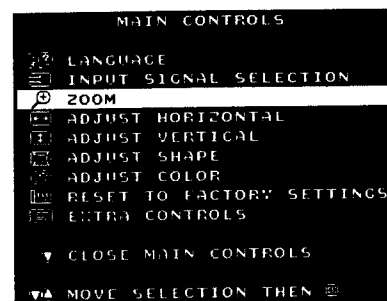
... to exit completely, press the button

Go to cover page

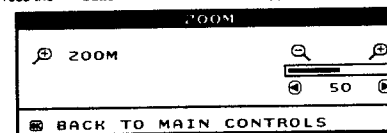
ZOOM

ZOOM increases or decreases the size of the images on your screen. To adjust the ZOOM follow the steps below.

- 1) Press the button on the monitor. The MAIN CONTROLS window appears.
- 2) Press the button until ZOOM is highlighted.



- 3) Press the button. The ZOOM window appears.



- 4) Press the or button to adjust ZOOM.
- 5) Press the button to confirm your selection and return to the MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS...

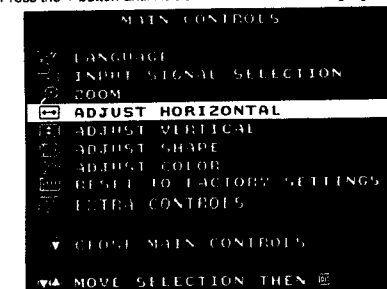
... to continue to ADJUST HORIZONTAL, press the button until ADJUST HORIZONTAL is highlighted. Next, follow steps 3 - 7 under ADJUST HORIZONTAL.

... to exit completely, press the button

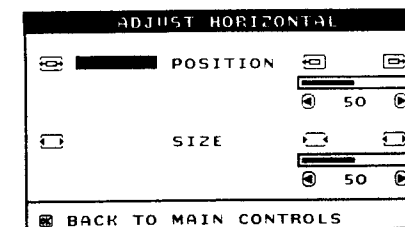
ADJUST HORIZONTAL

ADJUST POSITION under ADJUST HORIZONTAL shifts the image on your screen either to the left or right. Use this feature if your image does not appear centered. ADJUST SIZE under ADJUST HORIZONTAL expands or controls the image on your screen, pushing it out toward the left and right sides or pulling it in toward the center.

- 1) Press the button on the monitor. The MAIN CONTROLS window appears.
- 2) Press the button until ADJUST HORIZONTAL is highlighted.

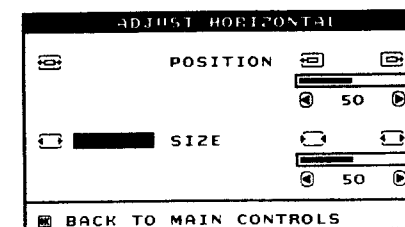


- 3) Press the button. The ADJUST HORIZONTAL window appears. ADJUST POSITION should be highlighted.



- 4) Press the or button to move the image to the left or right.

- 5) When the position is adjusted, press the button to return to MAIN CONTROLS window, or press the to highlight ADJUST SIZE.



- 6) To adjust the horizontal size, press the or button.

- 7) When the size is adjusted, press the button to return to MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS...

... to continue to ADJUST VERTICAL, press the button until ADJUST VERTICAL is highlighted. Next, start with step 3 under ADJUST VERTICAL and follow the directions.

... to exit completely, press the button

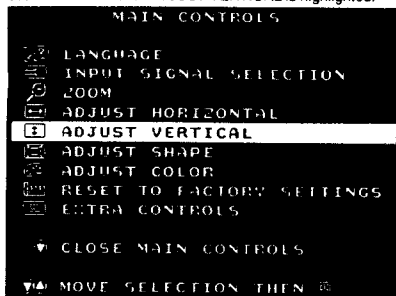
ADJUST VERTICAL

ADJUST POSITION under ADJUST VERTICAL shifts the image on your screen either up or down. Use this feature if your image does not appear centered. ADJUST SIZE under ADJUST VERTICAL expands or controls the image on your screen, pushing it out toward the top or bottom or pulling it in toward the center.

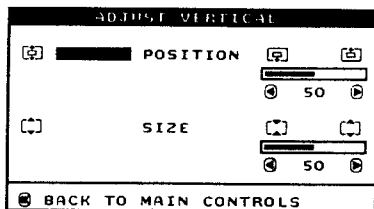
- 1) Press the button on the monitor. The MAIN CONTROLS window appears.

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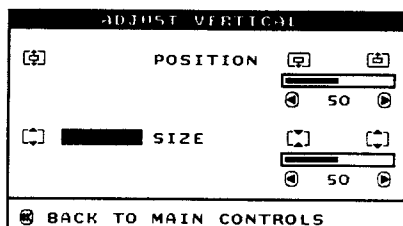
- 2) Press the button until ADJUST VERTICAL is highlighted.



- 3) Press the button. The ADJUST VERTICAL window appears. ADJUST POSITION should be highlighted.



- 4) Press the button to move the image up or down.
- 5) When the position is adjusted, press the button to return to MAIN CONTROLS window, or press the button to highlight ADJUST SIZE.



- 6) To adjust the vertical size, press the or button.

- 7) When the size is adjusted, press the button to return to MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS...

...to continue to ADJUST SHAPE, press the button until ADJUST SHAPE is highlighted. Next, start with step 3 under ADJUST SHAPE and follow the directions.

...to exit completely, press the button

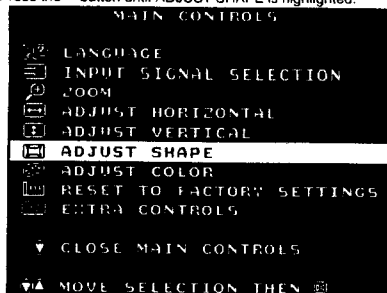
ADJUST SHAPE

ADJUST SIDE CURVE

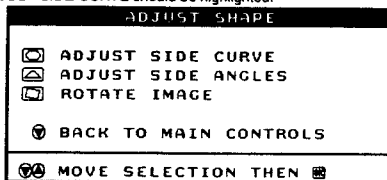
ADJUST SIDE CURVE under ADJUST SHAPE allows you to adjust two of the five preset options. These two options are PINCUSHION and BALANCED pincushion. Note: use these features only when the picture is not square.

- 1) Press the button on the monitor. The MAIN CONTROLS window appears.

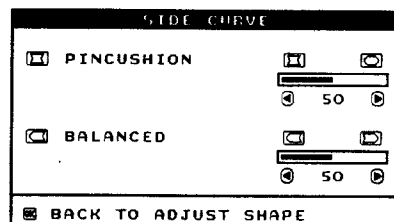
- 2) Press the button until ADJUST SHAPE is highlighted.



- 3) Press the button. The ADJUST SHAPE window appears. ADJUST SIDE CURVE should be highlighted.

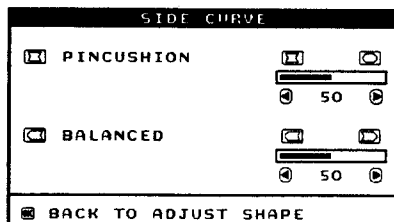


- 4) Press the button. The SIDE CURVE window appears. PINCUSHION should be highlighted.



- 5) To adjust the pincushion, press the or button.

- 6) When the pincushion is adjusted, press the button to highlight BALANCED or press the button to return to the ADJUST SHAPE window.



- 7) To adjust the balanced pincushion, press the or button.

- 8) When the balanced pincushion is adjusted, press the button to return to the ADJUST SHAPE window. BACK TO MAIN WINDOWS will be highlighted.

- 9) Press the button to return to the MAIN CONTROLS window, or press the button until ADJUST SIDE ANGLES is highlighted.

Go to cover page

Smart Help After returning to MAIN CONTROLS...

...to continue to ADJUST SIDE ANGLES, start with step 5 under ADJUST SIDE ANGLES and follow the directions.

...to exit completely, press the button twice.

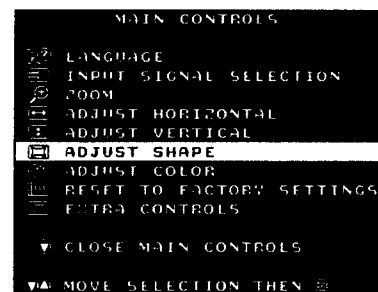
...to adjust only the BALANCED pincushion, follow steps 1 - 4 above, then press the button, and follow steps 7 - 9.

ADJUST SIDE ANGLES

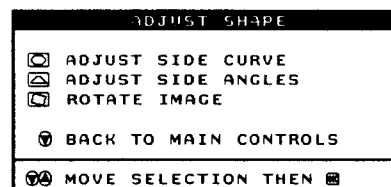
ADJUST SIDE ANGLES under ADJUST SHAPE allows you to adjust two of the five preset options. These two options are TRAPEZOID and PARALLELOGRAM. Note: use these features only when the picture is not square.

- 1) Press the button on the monitor. The MAIN CONTROLS window appears.

- 2) Press the button until ADJUST SHAPE is highlighted.

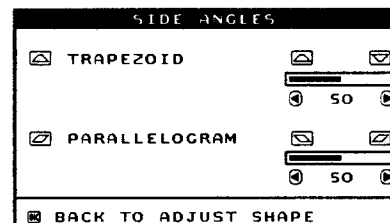


- 3) Press the button. The ADJUST SHAPE window appears. ADJUST SIDE CURVE should be highlighted.



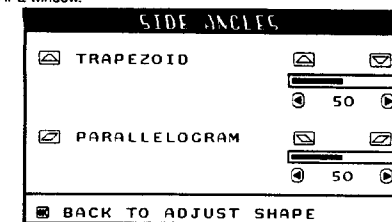
- 4) Press the button to highlight ADJUST SIDE ANGLES.

- 5) Press the button. The SIDE ANGLES window appears. TRAPEZOID should be highlighted.



- 6) To adjust the trapezoid, press the or button.

- 7) When the trapezoid is adjusted, press the button to highlight PARALLELOGRAM or press the button to return to the ADJUST SHAPE window.



- 8) To adjust the parallelogram, press the or button.

- 9) When the parallelogram is adjusted, press the button to return to the ADJUST SHAPE window. BACK TO MAIN WINDOWS will be highlighted.

- 10) Press the button to return to the MAIN CONTROLS window, or press the button until ROTATE IMAGE is highlighted.

Smart Help After returning to MAIN CONTROLS...

...to continue to ROTATE IMAGE, start with step 5 under ROTATE IMAGE and follow the directions.

...to exit completely, press the button twice.

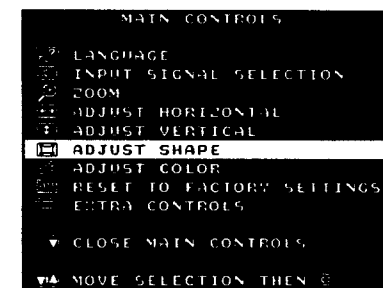
...to adjust only the PARALLELOGRAM, follow steps 1 - 4 above, then press the button, and follow steps 7 - 9

ROTATE IMAGE

ROTATE IMAGE under ADJUST SHAPE allows you to adjust one of the five preset options. These two options are PINCUSHION and BALANCED pincushion. Note: use this feature only when the picture is not square.

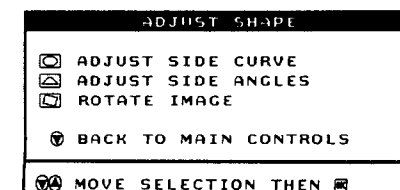
- 1) Press the button on the monitor. The MAIN CONTROLS window appears.

- 2) Press the button until ADJUST SHAPE is highlighted.



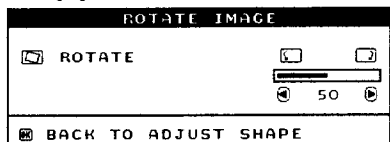
- 3) Press the button. The ADJUST SHAPE window appears. ADJUST SIDE CURVE should be highlighted.

- 4) Press the button until ROTATE IMAGE is highlighted.



Go to cover page

5) Press the button. The ROTATE IMAGE window appears. ROTATE should be highlighted.



6) To adjust the rotation, press the - or + button.

7) When the rotation is adjusted, press the button to return to the ADJUST SHAPE window. BACK TO MAIN CONTROLS should be highlighted.

8) Press the button to return to MAIN CONTROLS.

Smart Help After returning to MAIN CONTROLS...

... to continue to ADJUST COLOR, press the - button until ADJUST COLOR is highlighted. Next, start with step 3 under ADJUST COLOR and follow the directions.

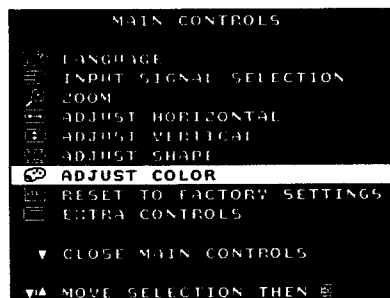
...to exit completely, press the button twice.

ADJUST COLOR

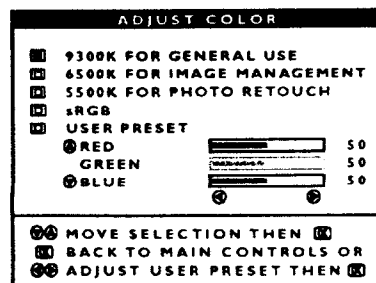
Your monitor has two preset options you can choose from. The first option is for GENERAL USE, which is fine for most applications. The second option is for GAMES, which is for playing computer games. When you select one of these options, the monitor automatically adjusts itself to that option. There is also a third option, USER PRESET, which allows you to adjust the colors on your screen to a setting you desire.

1) Press the button on the monitor. The MAIN CONTROLS window appears.

2) Press the + button until ADJUST COLOR is highlighted.

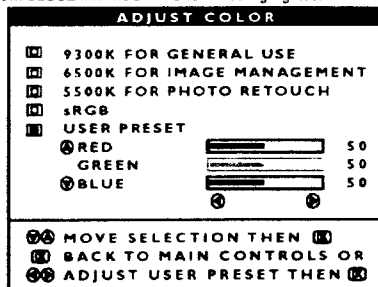


3) Press the button. The ADJUST COLOR window appears.



4) Press the - or + button to highlight 9300K for GENERAL USE, 6500K for GAMES, or USER PRESET.

5) Once you have highlighted GENERAL USE or GAMES, press the button to confirm your selection and return to the MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.



6a) If USER PRESET is highlighted, press the + button to highlight RED. Next, press the LEFT CURSOR or RIGHT CURSOR button to adjust the color red.

6b) When finished with RED, press the + button to highlight GREEN.

Next, press the - or + button to adjust the color green.

6c) When finished GREEN, press the + button to highlight BLUE.

Next, press the - or + button to adjust the color blue.

6d) When all adjustments are complete, press the button to confirm your adjustments and return to the MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS...

... to continue to RESET TO FACTORY SETTINGS, press the - button until RESET TO FACTORY SETTINGS is highlighted. Next, start with step 3 under RESET TO FACTORY SETTINGS.

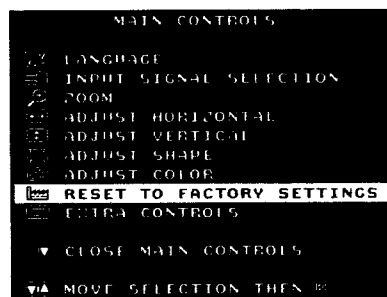
... to exit completely, press the button.

RESET TO FACTORY SETTINGS

RESET TO FACTORY SETTINGS returns everything in all the windows to factory presets.

1) Press the button on the monitor. The MAIN CONTROLS window appears.

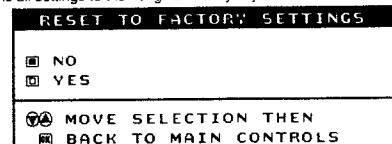
2) Press the + button until RESET TO FACTORY SETTINGS is highlighted.



3) Press the button. The RESET TO FACTORY SETTINGS window appears.

Go to cover page

4) Press the - or + button to select YES or NO. NO is the default. YES returns all settings to their original factory adjustments.



5) Press the button to confirm your selection and return to the MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS...

... to continue to EXTRA CONTROLS, press the - button until EXTRA CONTROLS is highlighted. Next, start with step 3 under EXTRA CONTROLS.

... to exit completely, press the button.

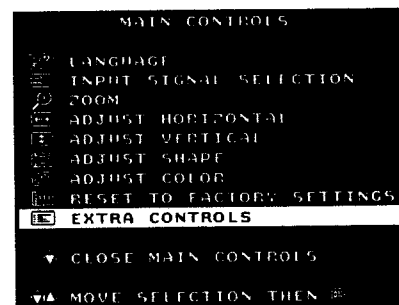
EXTRA CONTROLS

ADJUST MOIRE

EXTRA CONTROLS is a set of three features, including ADJUST MOIRE. Moire is a fringe pattern arising from the interference between two superimposed line patterns. To adjust your moire, follow the steps below. Note: Use only if necessary. By activating ADJUST MOIRE, sharpness can be affected.

1) Press the button on the monitor. The MAIN CONTROLS window appears.

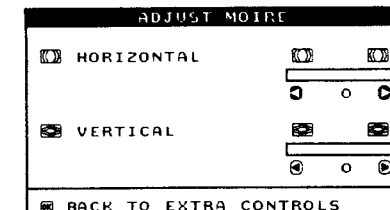
2) Press the DOWN CURSOR button until EXTRA CONTROLS is highlighted.



3) Press the button. The EXTRA CONTROLS window appears. will ADJUST MOIRE will be highlighted.

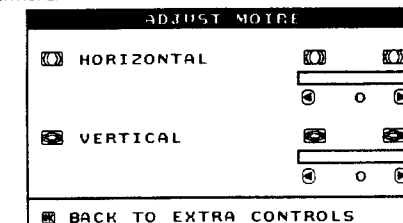


4) Press the button. The ADJUST MOIRE window appears. HORIZONTAL will be highlighted.



5) To adjust the horizontal moire, press the - or + button.

6) When the horizontal moire is adjusted, press the - button to highlight VERTICAL.



7) To adjust the vertical moire, press the - or + button.

8) When the vertical moire is adjusted, press the button to return to the EXTRA CONTROLS window. BACK TO MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS...

... to continue to DEGAUSS, press the - button until DEGAUSS is highlighted. Next, start with step 3 under EXTRA CONTROLS, DEGAUSS.

... to exit completely, press the button.

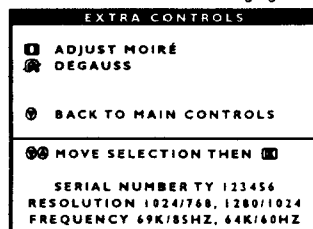
DEGAUSS

EXTRA CONTROLS is a set of three features, including DEGAUSS. Degaussing removes electromagnetic build up that may distort the color on your screen.

- 1) Press the  button on the monitor. The MAIN CONTROLS window appears.
- 2) Press the  button until EXTRA CONTROLS is highlighted.



- 3) Press the  button. The EXTRA CONTROLS window appears. ADJUST MOIRE will be highlighted.
- 4) Press the  button until DEGAUSS is highlighted.



- 5) To degauss your screen, press the  button. Your screen will be degaussed, then the MAIN CONTROLS window will reappear. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS ...
... to exit completely, press the  button.

CLOSE MAIN CONTROLS



Monitor Specific Troubleshooting

Self-Test Feature Check (STFC)

Your monitor provides a self-test feature that allows you to check whether your monitor is functioning properly. If your monitor and computer are properly connected but the monitor screen remains dark, run the monitor self-test by performing the following steps:

1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer.
3. Turn on the monitor.

If the monitor is functioning properly, you will see a OSD message as shown in the following illustration:



This box also appears during normal system operation if the video cable becomes disconnected or damaged. This box will remain on for one minute, go off five seconds, then on for one minute, and will repeat cycle.

1. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.
2. While in self-test mode, the LED remains green and the pattern remains on and stationary.

If your monitor screen still remains dark after you use the previous procedure, check your video controller and computer system; your monitor is functioning properly.

NO SIGNAL INPUT

If there is something wrong with the input signal, a message appears on the screen although the power indicator LED is still on. The message may indicate that the monitor is NO SIGNAL INPUT or that you need to check the signal cable.



OSD Lock

OSD lock is a feature which disables the OSD controls. It can be used when the monitor is set up for demonstration purposes or when adjustment of the OSD is not desirable.

Switch on OSD lock feature:

Press and hold the  button continuously for 15 seconds.

Release the button when the message

"CONTROL MENU IS LOCKED" appears.



Switch off OSD lock feature:

Press and hold the  button continuously for 15 seconds or until the message window "CONTROL MENU IS LOCKED" disappears, and "MAIN CONTROLS" appears.



To access factory mode

1. Turn off monitor (don't turn off PC)
2. Press  and  simultaneously on the front control panel, then press . Wait till the OSD menu with characters V30 107T5 V0.48 20021218 (below OSD menu) come on the screen of monitor.



Factory
Mode
Indicator

3. If OSD menu disappears on the screen of monitor, press  again (anytime), then the OSD menu comes on the screen again.
4. Using  : to select OSD menu.
5. Using  : to increase or decrease the setting.
6. Using  : to access/confirm the selection.

To leave factory mode

7. After alignment of factory mode, turn off monitor (if you do not turn off monitor, the OSD menu is always at the factory mode), then turn on monitor again (at this moment, the OSD menu goes back to user mode).

To access BURN IN mode

First of all, monitor displays an image.

1. Disconnect the video cable (interface cable).
2. Turn off monitor
3. Press  and  simultaneously on the front control panel, then the BURN IN mode comes on the screen of monitor as below.

50 seconds around

5 seconds around

repeatedly

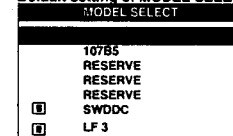
4. Reconnect the video cable, then return to normal image.

SERVICE MODE (Indication-Factory mode)

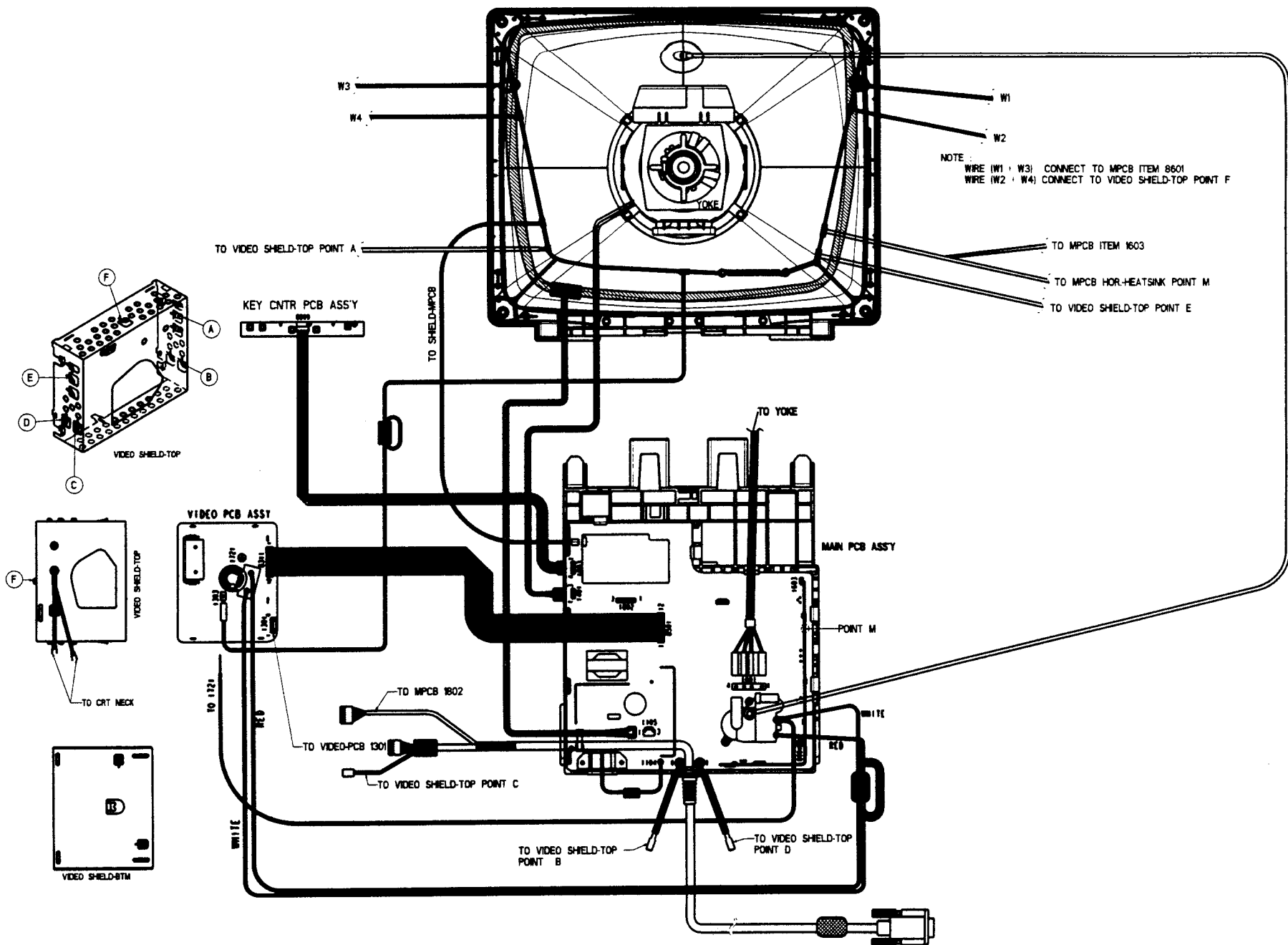


- 02060: stands for
1. using 10 hours already.
2. turn on/off 10 times.
3. using several hours + turn on/off monitor.

Default setting of MODEL SELECT (Do not change it.)



Wiring Diagram



Go to cover page

0. General

To be able to perform measurements and repairs on the "circuit boards", these unit should placed in the service position first.

1. Remove the rear cover in Fig. 1.

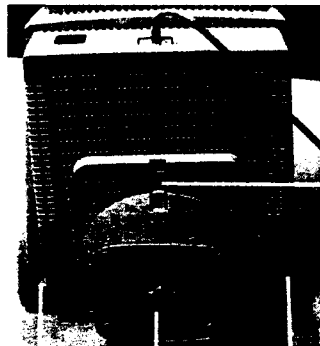
- Remove 2 screws as shown
- Remove back cover as shown
- Remove pedestal as shown

2. Video panel

- Disconnect the wire between metal shield of Video panel and CRT neck as shown in Fig. 2.
- Disconnect the CRT ground from Video panel.
- Remove screw grounding and grounding wire in Fig. 3.

3. Main board connector in Fig. 4

- Disconnect york wire
- Disconnect rotation connector
- Disconnect control board connector
- Remove Screw for fixed I/F cable
- Remove signal connector
- Remove degaussing wire connector

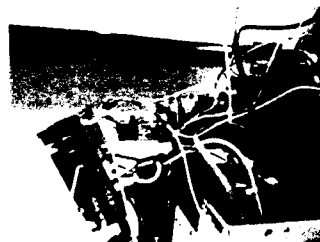


Pedestal ass'y

Screw

Fig. 1

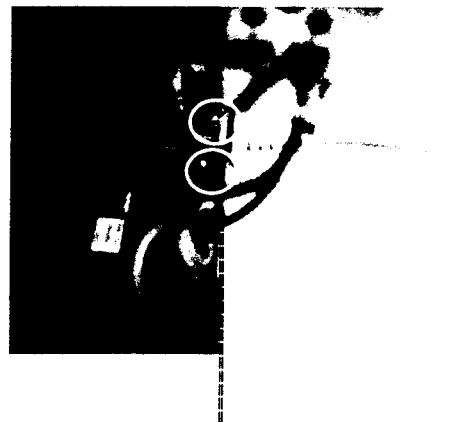
Screw



CRT groudng wirel

Video Panel

Fig. 2



screw - grounding

Fig. 3



Control connector

Rotation connector

Signal connector

Degaussing wire connector

Fig. 4

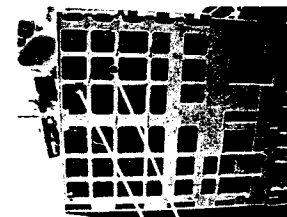
Go to cover page

4. Main panel with Bottom Tray

- Remove 2 screws for disconnect the Bottom tray as Fig. 5
- Pull the bottom tray on press right and left side clip from fig. 6 to fig. 7.

5. SERVICE POSITION

Reconnect connectors, some wires and panels (chassis), service position can be available for DC/AC measurement as shown in Fig. 8.



Screw

Fig. 5

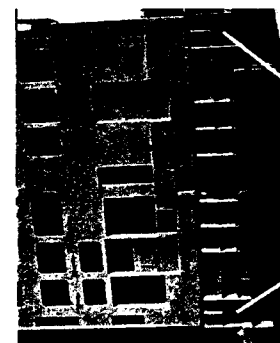


Fig. 6

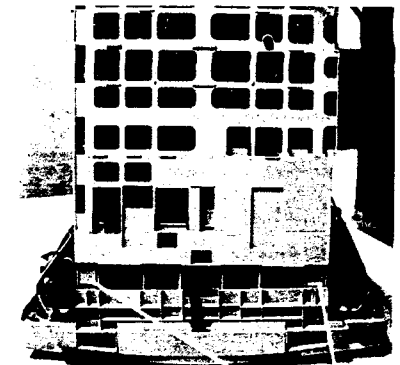


Fig. 7

Pull-up



Video panel Main panel

Fig. 8 SERVICE POSITION

Press CLIP

Warnings

1. Safety regulations require that the unit should be returned in its original condition and that components identical to the original components are used. The safety components are indicated by the symbol **▲**.
2. In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0 V (after approximately 30 seconds).
3. **ESD ▲**
All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten their life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the ground of the unit. Keep components and tools also at this same potential.
4. When repairing a unit, always connect it to the AC Power voltage via an isolating transformer.
5. Be careful when taking measurements in the high-voltage section and on the picture tube panel.
6. It is recommended that safety goggles be worn when replacing the picture tube.
7. When making adjustments, use plastic rather than metal tools. This will prevent any short-circuit or the danger of a circuit becoming unstable.
8. Never replace modules or other components while the unit is switched on.
9. Together with the deflection unit, the picture tube is used as an integrated unit. Adjustment of this unit during repair is not recommended.
10. After repair, the wiring should be fastened in place with the cable clamps.
11. All units that are returned for service or repair must pass the original manufactures safety tests.

Notes

1. The direct voltages and waveforms are average voltages. They have been measured using the Service test software and under the following conditions :
 - Mode : 640 * 480 (31.5kHz / 60Hz)
 - Signal pattern : grey scale
 - Adjust brightness and contrast control for the mechanical mid-position (click position)
2. The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
3. The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

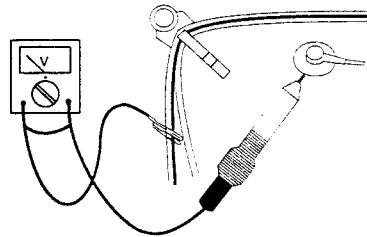


Fig.1

1. General point

=====

- 1.1 During alignment and measurement supply a distortion free AC-mains voltage to the apparatus via an isolating transformer with a low internal resistance.
- 1.2 All voltages have to be measured or applied with respect to ground, unless otherwise stated. Note: Not all heatsinks are grounded, avoid using heatsinks as ground.
- 1.3 The term "Linear RGB" is meant the 0.7 Vpp video with separate SYNC (TTL Level). Reference factory preset mode timings (format of pattern generator CHROMA-2135) are shown in TABLE 1 to TABLE 8. Preload timing TABLE 9 to TABLE 22.
- 1.4 Any external voltage source should have low internal impedance.
- 1.5 The alignment has to be done in room temperature 25 °C.
- 1.6 Digit control buttons for

OSD MENU :

LANGUAGE

ZOOM

ADJUST HORIZONTAL - POSITION

- SIZE

- POSITION

ADJUST VERTICAL

- SIZE

ADJUST SHAPE

- ADJUST SIDE CURVE

- PINCUSHION

- BALANCE

- ADJUST SIDE ANGLES

- TRAPEZOID

- PARALLELOGRAM

- ROTATE IMAGE

ADJUST COLOR

- 3colour temperatures (9300K, 6500K, SRGB)

- 1 user preset independent RGB adjustment

RESET TO FACTORY SETTING

EXTRA CONTROLS

- ADJUST MOIR

- HORIZONTAL

- VERTICAL

- DEGAUSSING

MODEL SELECT

CLOSE MAIN CONTROLS

2. Pre warm-up

=====

- 2.1 Align in pre-warmed condition at least 30 minutes during Manufacturing.

3. Main chassis alignment

=====

- 3.1 Power supply adjustment :
All supply voltages were fixed and adjustment is unnecessary. (Check the voltages on Chassis line)
- 3.2 Apply a VGA 31.5KHz/480 lines cross-hatch signal.
- 3.2.1 Adjust BPLUS of factory setting to obtain the anode voltage 25.0KV +/- 1KV at zero beam current.
- 3.3 Monitor the following auxiliary voltages.

+5 source across 7153 Pin out and GND	+5V ± 0.15 VDC
+6 source across C2154	+6.2V ± 0.2 VDC
+12 source across C2155	+12.6V ± 0.4 VDC
-12 source across C2156	-12.5V ± 0.4 VDC
+82 source across C2153	+82.0V ± 1.5 VDC
+190 source across C2152 (+ to Gnd)	+190.5V ± 3.0 VDC
-96 source across C2630	-96V ± 6.0 VDC

4. General conditions for aging and alignment

=====

- 4.1 Aging/burn-in: Use low mains AC supply (90Vac) for monitor first power on test. Pre-adjust the Focus till cross hatch pattern can be clearly visible then enter the aging mode. (Press both Up and Down keys, and then switch-on the monitor with signal cable disconnected.)

- 4.2 During all alignments, supply a distortion free AC mains voltage to the monitor set via an isolating transformer with low internal impedance.
- 4.3 All measurements are carried out at nominal mains voltage, unless otherwise stated.
- 4.4 Align in pre-warmed condition, at least 30 minutes warm-up with nominal light output.
- 4.5 Purity, geometry and subsequent alignments should be carried out in a magnetic cage with correct magnetic field.

Northern Hemisphere: H = 0, V = 450 mG, Z = 0
Southern Hemisphere: H = 0, V = -500 mG, Z = 0
Equatorial Support : H = 0, V = 0 mG, Z = 0
- 4.6 All voltages are to be measured or applied with respect to ground, unless otherwise stated. Attention : Not all heatsinks are GND, avoid using heatsinks as ground.
- 4.7 The white balance and purity has to be adjusted in fully lighted room.
- 4.8 All alignments have to be done in a room with a temperature Of 25 ± 10 °C.
4. Alignment of Vg2, cut-off point, white tracking
=====
- 5.1 EEPROM data has to be pre-set: according to software approval sheets, sheet-139, sheet-140. (loaded beforehand with average values of mode pre-set data and mode pre-set selection bytes.) The following table is for reference only. Optimum values should be determined by Factory (ME) for every production batch.

In factory, alignments are done via I²C on the I/F cable DDC bus, but the set can also be manually aligned. Enter factory mode by pressing both Up and Down keys while power-on. Select factory.

Item	CRT	Condition/Description	CPT DAC value	LG DAC value	SDI DAC value
9300/6500/sRGB Bias		Nominal Cut-off setting	127	127	127
9300/6500/sRGB Gain		Nominal Gain setting	185	185	185
sRGB contrast		sRGB contrast	255	255	255
sRGB bright		sRGB brightness	127	127	127
Corner -T, B		Fh < 36KHz	134, 122	134, 126	136, 124
Corner -T, B		36KHz < Fh < 52KHz	134, 122	130, 126	130, 124
Corner -T, B		52KHz < Fh < 65KHz	140, 122	126, 126	130, 124
Corner -T, B		Fh > 65KHz	140, 120	126, 126	128, 124
Pin Correction -T, B		Top/Bottom pin correction	120, 126	122, 122	120, 120
Pin Correction -S, W		S/W shape pin correction	130, 144	136, 130	130, 144
V-offset		V-raster centering	65	60	90
V-gain		V size control range for user	180	180	200
Sub-contrast		9300 peak light output adjust	220	220	220
Sub-brightness		Brightness control range limit	180	160	160
Linearity -H		Fh < 33.00KHz	170	175	180
Linearity -H		33.00KHz < Fh < 36.00KHz	140	140	165
Linearity -H		36.00KHz < Fh < 40.00KHz	125	130	150
Linearity -H		40.00KHz < Fh < 45.00KHz	105	115	115
Linearity -H		45.00KHz < Fh < 52.00KHz	90	95	90
Linearity -H		52.00KHz < Fh < 55.00KHz	80	90	85
Linearity -H		55.00KHz < Fh < 60.50KHz	70	80	80
Linearity -H		60.50KHz < Fh < 66.00KHz	65	75	70
Linearity -H		Fh > 66.00 KHz	60	60	60
Linearity -V		Vertical S-correction	50	50	50
Range-UserH		H size control range for user	75	75	75
Range-Sub		Zoom control range for user	55	55	55
B+		Adjusted for Anode voltage	89	89	89
ABL		9300 full white light o/p adjust	110	120	135
EHT comp -H, V		Fh < 33.00KHz	132, 114	132, 116	132, 114
EHT comp -H, V		33.00KHz < Fh < 36.00KHz	124, 114	130, 114	124, 114
EHT comp -H, V		36.00KHz < Fh < 40.00KHz	122, 116	126, 116	122, 114
EHT comp -H, V		40.00KHz < Fh < 45.00KHz	120, 116	124, 116	120, 116
EHT comp -H, V		45.00KHz < Fh < 52.00KHz	114, 116	118, 118	114, 116
EHT comp -H, V		52.00KHz < Fh < 55.00KHz	112, 116	118, 118	112, 116
EHT comp -H, V		55.00KHz < Fh < 60.50KHz	112, 116	116, 118	112, 116
EHT comp -H, V		60.50KHz < Fh < 66.00KHz	112, 118	114, 118	112, 118
EHT comp -H, V		Fh > 66.00 KHz	114, 118	114, 118	114, 118
V-Linbal		Vertical top/bottom linearity	140	140	140
V-Focus		Vertical focus amplitude	100	100	180
OSD Contrast		OSD Contrast	255	255	255
LF-Brigh		LightFrame Brightness	3	3	3
LF-Sharp		LightFrame Sharpness	3	3	3
Moir setting -H		All modes	0	0	0
Moir setting -V		All modes	0	0	0

- 5.2 External degaussing Remove ferromagnetic measuring equipment, iron tablet, etc., in the neighbourhood of the apparatus within half a meter. Position the set in E-W direction and degauss well via external degaussing coil. Slowly increase the distance between the picture tube and Degaussing coil, keeping the coil in parallel with the Screen of CRT. When the distance is more than 2m, turn off the degaussing current.
- 5.3 Adjustment mode: 68.7KHz/85Hz with correctly adjusted video size 306x230mm. Use color-analyzer (Minolta CA-100) to adjust cut-off and white balance. Before alignment, set initial data as item 5.1 and brightness set to 50%.
- White alignment measurement equipment set-ups:**
- Setup A: 100x100mm white block, 0.7Vpp input video signal, contrast at 0%, 9300 mode Calibrate CA100, Low 9300 RGB=100 x=0.283, y=0.297, Y=0.10FL $\pm$ 0.05FL
- Setup B: 100x100mm white block, 0.7Vpp input video signal, contrast at 100%, 9300 mode Calibrate CA100, High 9300 RGB=100 x=0.283, y=0.297, Y=41FL $\pm$ 1FL
- Setup C: 100x100mm white block, 0.7Vpp input video signal, contrast at 0%, 6500 mode Calibrate CA100, Low 6500 RGB=100 x=0.313, y=0.329, Y=0.10FL $\pm$ 0.05FL
- Setup D: 100x100mm white block, 0.7Vpp input video signal, contrast at 100%, 6500 mode Calibrate CA100, High 6500 RGB=100 x=0.313, y=0.329, Y=36FL $\pm$ 1FL
- Setup E: 100x100mm white block, 0.7Vpp input video signal, contrast at 0%, sRGB mode Calibrate CA100, Low sRGB RGB=100 x=0.313, y=0.329, Y=0.10FL $\pm$ 0.05FL
- Setup F: 100x100mm white block, 0.7Vpp input video signal, contrast at 100%, sRGB mode Calibrate CA100, High sRGB RGB=100 x=0.313, y=0.329, Y=36FL $\pm$ 1FL
- Setup G: Full white (306x230mm), 0.7Vpp input video signal, contrast at 100%, 9300 mode Calibrate CA100, High 9300 RGB=100 x=0.313, y=0.329, Y=30FL $\pm$ 1FL
- Adjustment procedure:**
- 5.3.1 Setup A, manually rotate Vg2 pot-meter on LOT until brightness reaches 100 scale.
- 5.3.2 Setup A, adjust RGB cut-off (I°C) for all colors at 100 7 scale, 9300 mode. (x=0.283, y=0.297, Y=0.10 0.05FL)
- 5.3.3 Setup B, adjust RGB gain (I°C) for all colors at 100 2 scale, 9300 mode. (x=0.283, y=0.297, Y=41 0.5 FL)
- 5.3.4 Repeat 5.3.2, 5.3.3 (RGB cut-off and gain) to get both low and high 9300 scales at 100. (0.10FL 0.05FL for low scale; 41FL 1FL for high scale. x/y tolerance 0.005)
- 5.3.5 Setup C, adjust RGB cut-off (I°C) for all colors at 100 7 scale, 6500 mode. (x=0.313, y=0.329, Y=0.10FL 0.05FL)
- 5.3.6 Setup D, adjust RGB gain (I°C) for all colors at 100 2 scale, 6500 mode. (X=0.313, y=0.329, Y=36FL $\pm$ 1FL)
- 5.3.7 Repeat 5.3.5, 5.3.6 (RGB cut-off and gain) to get both low and high 6500 scales at 100. (0.10FL 0.05FL for low scale; 36FL 1FL for high scale. x/y tolerance 0.005)
- 5.3.8 Setup E, adjust RGB cut-off (I°C) for all colors at 100 7 scale, sRGB mode. (x=0.313, y=0.329, Y=0.10FL 0.05FL)(same values as 6500 mode)
- 5.3.9 Setup F, adjust RGB gain (I°C) for all colors at 100 2 scale, sRGB mode. (x=0.313, y=0.329, Y=36FL $\pm$ 1FL)(same values as 6500 mode)
- 5.3.10 sRGB brightness at 50%. Adjust sRGB contrast (I°C) to get Y=23FL $\pm$ 1FL for full white pattern. (0.10FL 0.05FL for low scale, 23FL 1FL for high scale. x/y tolerance 0.005)
- 5.4 Setup G, adjust ABL (I°C) for 30FL 0.5FL, 9300 mode. The above alignment method may be changed, as long as the final results are the same. (The above method has least amount of adjustment and iteration steps.)
- 6. Adjustment of the picture geometry**
- 6.1 Alignment of primary geometry

- 6.1.1 Apply Timing 7 (64KHz/60Hz, 1280x1024) with black video signal, set V-position at 50%, set H and V-size for visible raster edges at all sides. (RGB cut-off can be increased temporarily to make raster visible. After adjustment, restore RGB cut-off to original values.) Slide switch 1603 for centered raster in horizontal Direction. Adjust V-offset (I°C) for centered raster in vertical direction. Apply Timing 8 (68.7KHz/85Hz) with crosshatch signal and start geometry alignment.
- 6.1.2 Adjust the Horizontal Size to 306mm.
- 6.1.3 Adjust the Horizontal Position for centered video.
- 6.1.4 Adjust the Vertical Size to 230 mm.
- 6.1.5 Adjust Vertical Position for centered video
- 6.1.6 Adjust picture tilt for correct TOP/BOTTOM lines. (Picture tube should be mounted without tilt w.r.t. cabinet)
- 6.1.7 Adjust pincushion to get optimum vertical line.
- 6.1.8 Adjust trapezoid to get optimum vertical line.
- 6.1.9 Adjust balanced pincushion to get optimum vertical line.
- 6.1.10 Adjust the parallelogram to get optimum vertical line.
- 6.1.11 If needed, adjust the top / bottom corner control to get optimum corner geometry. Top and bottom corner only affect top and bottom 60mm of the vertical lines. (6.1.7, 6.1.8, 6.1.9 and 6.1.10 may need to be readjusted.)
- 6.1.12 Store the adjusted result and exit OSD. (The values for pincushion, trapezoid, balance pincushion and parallelogram can be copied to the other pre-set modes to shorten alignment time.)
- 6.2 Other pre-set mode geometry adjustment Use following procedure for all pre-set modes (except 68.7KHz/85Hz) (Timing Table 1 - 8)
- 6.2.1 Adjust the Horizontal Size to 306mm.
- 6.2.2 Adjust the Horizontal Position to center position.
- 6.2.3 Adjust the Vertical Size to 230 mm.
- 6.2.4 Adjust the Vertical Position for correctly centred vertical video.
- 6.2.5 Adjust pincushion to get optimum vertical line.
- 6.2.6 Adjust trapezoid to get optimum vertical line.
- 6.2.7 Adjust balanced pincushion to get optimum vertical line.
- 6.2.8 Adjust the parallelogram to get optimum vertical line. (6.2.5, 6.2.6, 6.2.7 and 6.2.8 may need some iteration.)
- 6.2.9 Store the set result and exit OSD.
- 6.3 Other pre-load modes can be visible inside the bezel.
- 7. Focus adjustment**
- =====
- With full white pattern display at timing 68KHz/85Hz 1024x768, set brightness at 50% and adjust contrast to 25 FL at the center of the screen.
- 8 and adjust H and V focus pot-meters which are located at flyback transformer, until H- and V-line focus is optimal over the entire screen.
- 8. Adjustment of Moir**
- =====
- Apply full white pattern and adjust contrast till luminance around 15FL. 1/3 area with minor moir can be acceptable. If needed, use moir cancellation function and adjust the H- moir or V-moir to cancel the moir defect, then save at factory.
- 9. Loading DDC code**
- =====
- The DDC HEX data (refer to sheet-190) should be written into the DDC by EEPROM writer or equivalent method.
- 10. Default settings**
- =====
- The finished product should have the following default Settings: Contrast: 100%, Brightness: 50%, Color: 9300, Language: English(Chinese). Power Save: On (Remark : Every mode is independent for reset to factory setting.)

TIMING FOR V30 GS4 107T5 71K MODEL

REFERENCE PATTERN GENERATOR : CHROMA 2135
* According to VESA version 1.0 release 0.6p

1. General

DDC Data Re-programming

In case the main EEPROM with Software DDC which store all factory settings were replaced because a defect, repaired monitor the serial numbers have to be re-programmed.

It is advised to re-soldered the main EEPROM with Software DDC from the old board onto the new board if circuit board have been replaced, in this case the DDC data does not need to be re-programmed.

Additional information

Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification Data (EDID) information may be also obtained from VESA.

DDC EDID structure

For the monitor : Standard Version 3.0
Structure Version 1.2

2. System and equipment requirements

1. An i486 (or above) personal computer or compatible.
 2. Microsoft operation system Windows 95/98.
 3. EDID301.EXE program (3138 106 10103) shown as Fig. 1
 4. Software DDC Alignment kits (4822 310 11184) shown as Fig. 2.
- The kit contents: a. Alignment box x1
b. Printer cable x1
c. D-Sub cable x1

Note: The EDID301.EXE (Release Version 1.58, 20000818) is a windows-based program, which cannot be run in MS-DOS.



Figure 1 Diskette with EDID301.EXE

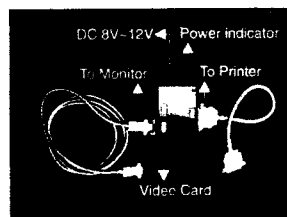
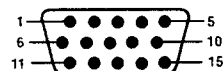


Fig. 2 Alignment Kits

3. Pin assignment

A. 15-pin D-Sub Connector

The 15-pin D-sub connector (male) of the signal cable on the 3rd row for DDC feature :



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	Not connected - no pin
2	Green video input	10	Sync. Ground
3	Blue video input	11	Ground
4	Ground	12	Bi-directional data (SDA)
5	for selftest (PC ground)	13	H.Sync
6	Red video ground	14	V.Sync (VCLK)
7	Green video ground	15	Data clock line (SCL)
8	Blue video ground		

4. Configuration and procedure

There is no Hardware DDC (DDC IC) anymore. Main EEPROM stores all factory settings and DDC data (EDID code) which is so called Software DDC. The following section describes the connection and procedure for Software DDC application. The main EEPROM can be re-programmed by enabling "factory memory data write" function on the DDC program (EDID301.EXE).

*** INITIALIZE ALIGNMENT BOX ***

In order to avoid that monitor entering power saving mode due to sync will cut off by alignment box, it is necessary to initialize alignment box before re-programming DDC Data. Following steps show you the procedures and connection.

- Step 1:** Supply 8~12V DC power source to the Alignment box by plugging a DC power cord or using batteries.
- Step 2:** Connecting printer cable and video cable of monitor as shown in Fig.3.

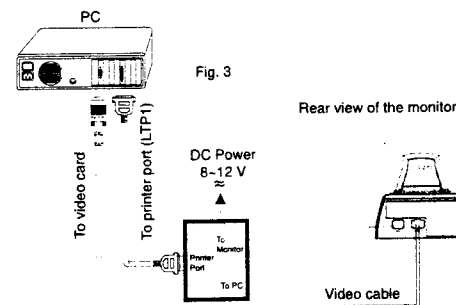


Fig. 3

Step 3: Installation of EDID301.EXE

Method 1: Start on DDC program

Start Microsoft Windows.

1. Insert the disk containing EDID301.EXE program into floppy disk drive.
2. Click **Start**, choose Run at start menu of Windows 95/98 as shown in Fig. 4.

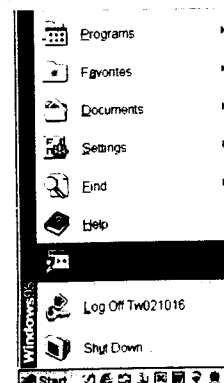


Fig. 4

3. At the submenu, type the letter of your computer's floppy disk drive followed by **EDID301** (for example, **A:\EDID301**).

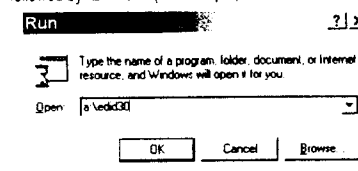


Fig. 5

4. Click OK button. The main menu appears (as shown in Fig. 6). This is for initialize alignment box.

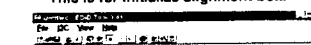


Fig. 6



Note 1: If the connection is improper, you will see the following error message (as shown in Fig. 7) before entering the main menu. Meanwhile, the (read EDID) function will be disable. At this time, please make sure all cables are connected correctly and fixedly, and the procedure has been performed properly.

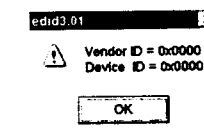


Fig. 7

Method 2: After create a shortcut of EDID301.EXE

Double click EDID301 icon (as shown in Fig. 8) which is on the screen of Windows Wallpaper. Bring up main menu of EDID301 as shown in Fig. 9. This is for initialize alignment box.



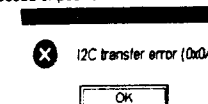
Fig. 8



Fig. 9

Note 2: During the loading, EDID301 will verify the EDID data which just loaded from monitor before proceed any further function, once the data structure of EDID can not be recognized, the following error message will appear on the screen as below. Please confirm following steps to avoid this message.

1. The data structure of EDID was incorrect.
2. DDC IC that you are trying to load data is empty.
3. Wrong communication channel has set at configuration setup windows.
4. Cables loosed or poor contact of connection.



Re-programming EEPROM (Software DDC)

Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 10

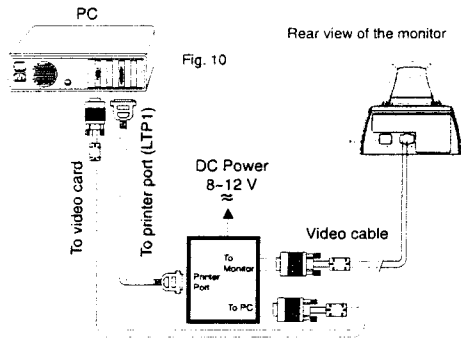


Fig. 10

Step 2: Read DDC data from monitor

- 1-1 Click the left key of Mouse, or hit any key on the keyboard, then the characters disappear from the screen.
- 1-2 Click icon as shown in Fig. 11 from the tool bar to bring up the "Configuration Setup" windows as shown in Fig. 12.



Fig. 11

2. Select the DDC2B as the communication channel. Select "Enable" & fill out "F0" for Mapped EDID page address as shown in Fig. 12.

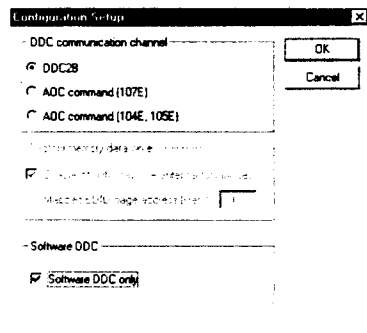


Fig. 12

3. Click OK button to confirm your selection.

4. Click icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 13.

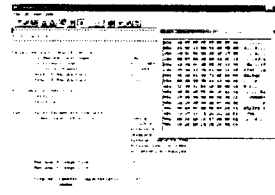


Fig. 13

Step 3: Modify DDC data (verify EDID version, week, year)

1. Click (new function) icon from the tool bar, bring up Step 1 of 9 as shown in Fig. 14. EDID301 DDC application provides the function selection and text change (select & fill out) from Step 1 to Step 9.

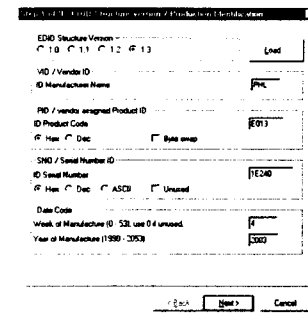


Fig. 14

Step 4: Modify DDC data (Monitor Serial No.)

1. Click Next till the Step 7 of 9 window appears as shown in Fig. 15.
2. Fill out the new Serial No. (for example, TY 503960, TY 123456).
3. Click Next till the last step window appears, then click Finish to exit the Step window.

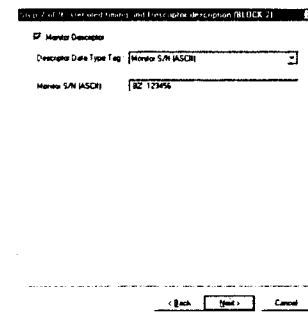
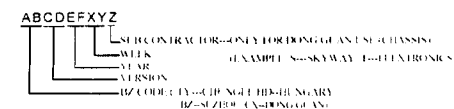


Fig. 15



Step 5: "Configuration Setup & Enter Factory Mode" for "write EDID data"

1. Click icon from the tool bar to bring up the Configuration Setup windows again. Then, select "Software DDC only" as shown in Fig. 16. Click "OK".

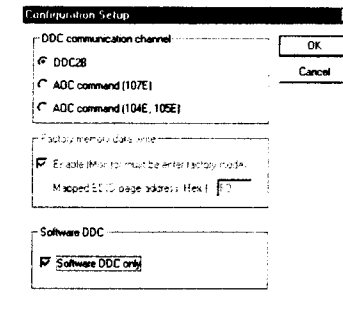
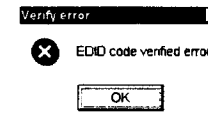


Fig. 16

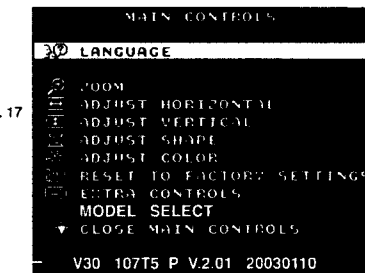
If you do not select "Software DDC only", when you execute "write EDID", it will bring up an error message as below.



To access factory mode

1. Turn off monitor (don't turn off PC)
2. Press " " and " " simultaneously on the front control panel, then press " " , wait till the OSD menu with characters V30 107T5 P V2.01 20030110 (below OSD menu) come on the screen of monitor.

Fig. 17



Factory Mode Indicator

If OSD menu disappears on the screen of monitor, press " " again (anytime), then the OSD menu comes on the screen again.

If you do not access "Factory mode", when you execute "write EDID", it will bring up an error message as below.



Step 6: Write DDC data

1. Click (Write EDID) icon from the tool bar to write DDC data. Bring up "Writing 0%-100%, ready" a progressing bar on the left down corner.
2. Click (Read EDID) to confirm it.

Step 7: Confirm Serial Number in User Mode

1. Press the button to turn off the monitor. Press the button again to turn on the monitor.
2. Press the button to bring up the OSD Main Menu.
3. Press the button to select Extra Controls, press the button to confirm your selection.
4. Confirm the Serial Number "123456" is updated as shown in Fig. 18.

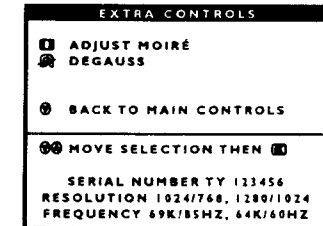


Fig. 18

Step 8: Save DDC data

Sometimes, you may need to save DDC data as a text file for using in other IC chip. To save DDC data, follow the steps below:

1. Click (Save) icon (or click "file" -> "save as") from the tool bar and give a file name as shown in Fig. 19. The file type is EDID301 file (*.ddc) which can be open in WordPad. By using WordPad, the texts of DDC data & table (128 bytes, hex code) can be modified. If DDC TEXTS & HEX Table are completely correct, it can be saved as .ddc file to re-load it into EEPROM for DDC Data application.

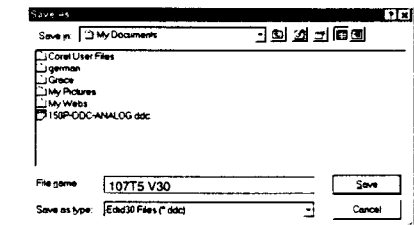


Fig. 19

2. Click Save.

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Step 9: Load DDC data

1. Click  from the tool bar.
2. Select the file you want to open as shown in Fig. 20.
3. Click **Open**.
4. Access "Factory Mode" and enable "Software DDC only" as shown in Fig. 17 & Fig. 16.
5. Write EDID (click ).

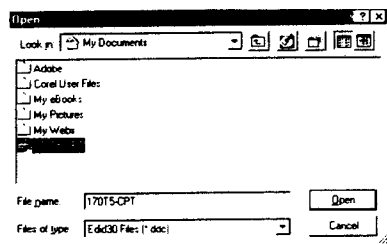


Fig. 20

Note 2 : In Factory Mode: Read/Write DDC data

Before Read/Write EDID code, please confirm that the **Software DDC only was enabled** as shown in Fig. 23.

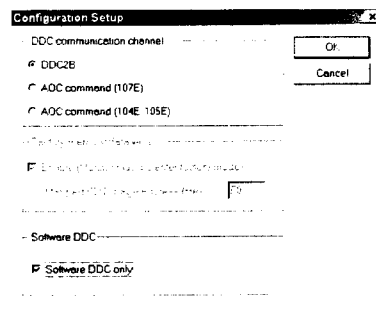


Fig. 23

Step 10: Exit DDC program

Pull down the File menu and select Exit as shown in Fig. 21. (EDID Tool 3.01)

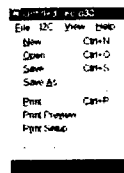


Fig. 21

Note1 : In User Mode: Read DDC data only

Before read EDID code, please confirm that the **Software DDC only was disabled** as shown in Fig. 22.

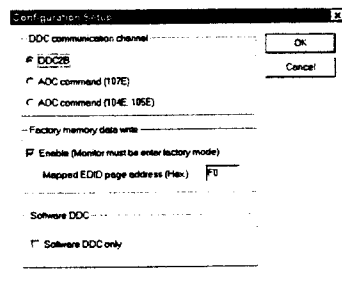
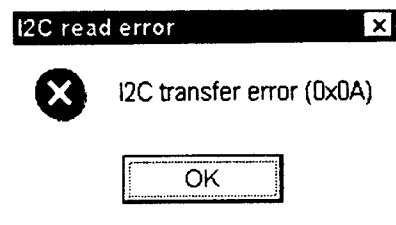


Fig. 22

If you do not disable "Software DDC only", when you execute "read EDID", it will bring up an error message as below.



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EDID log file for CPT tube		Standard Timing Identification #5	
Vendor/Product Identification		Horizontal active pixels : 640	
ID Manufacturer Name	: PHL	Aspect Ratio : 4:3	
ID Product Code	: E013 (HEX.)	Refresh Rate : 100	
ID Serial Number	: 1E240 (HEX.)	Standard Timing Identification #6	
Week of Manufacture	: 4	Horizontal active pixels : 800	
Year of Manufacture	: 2003	Aspect Ratio : 4:3	
EDID Version, Revision		Refresh Rate : 100	
Version	: 1	Standard Timing Identification #7	
Revision	: 3	Horizontal active pixels : 1280	
Basic Display Parameters/Features		Aspect Ratio : 4:3	
Video Input Definition	: Analog Video Input	Refresh Rate : 60	
	: 0.700V/0.000V (0.70Vpp)	Standard Timing Identification #8	
	without Blank-to-Black Setup	Horizontal active pixels : 1152	
	Separate Sync	Aspect Ratio : 4:3	
	without Composite Sync	Refresh Rate : 75	
	without Sync on Green	Detailed Timing #1	
	no Serration required	Pixel Clock (MHz) : 25.18	
Maximum H Image Size	: 31	H Active (pixels) : 640	
Maximum V Image Size	: 23	H Blanking (pixels) : 160	
Display Transfer Characteristic	: 2.86	V Active (lines) : 350	
(gamma)		V Blanking (lines) : 99	
Feature Support (DPMS)	: Standby	H Sync Offset (F Porch) (pixels) : 16	
	Suspend	H Sync Pulse Width (pixels) : 96	
	Active Off	V Sync Offset (F Porch) (lines) : 37	
Display Type	: RGB color display	V Sync Pulse Width (lines) : 2	
Color Characteristics		H Image Size (mm) : 306	
Red X coordinate	: 0.631	V Image Size (mm) : 230	
Red Y coordinate	: 0.329	H Border (pixels) : 0	
Green X coordinate	: 0.276	V Border (lines) : 0	
Green Y coordinate	: 0.6	Flags : Non-interlaced	
Blue X coordinate	: 0.143		
Blue Y coordinate	: 0.057		
White X coordinate	: 0.283		
White Y coordinate	: 0.297		
Established Timings		Monitor Descriptor #2	
Established Timings I	: 720 x 400 @70Hz (IBM,VGA)	Serial Number : BZ 123456	
	640 x 480 @60Hz (IBM,VGA)	Monitor Descriptor #3	
	640 x 480 @72Hz (VESA)	Monitor Name : PHILIPS 107T5	
	640 x 480 @75Hz (VESA)	Monitor Descriptor #4	
	800 x 600 @60Hz (VESA)	Monitor Range Limits	
Established Timings II	: 800 x 600 @72Hz (VESA)	Min. Vt rate Hz : 50	
	800 x 600 @75Hz (VESA)	Max. Vt rate Hz : 160	
	832 x 624 @75Hz (Apple,Mac II)	Min. Horiz. rate kHz : 30	
	1024 x 768 @60Hz (VESA)	Max. Horiz. rate kHz : 71	
	1024 x 768 @70Hz (VESA)	Max. Supported Pixel : 110	
	1024 x 768 @75Hz (VESA)	No secondary GTF timing formula supported.	
Manufacturer's timings		Extension Flag : 0	
Standard Timing Identification #1		Check sum : 7D (HEX.)	
Horizontal active pixels	: 640	EDID data (128 bytes)	
Aspect Ratio	: 4:3	0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00	
Refresh Rate	: 85	8: 41 9: 0c 10: 13 11: e0 12: 40 13: e2 14: 01 15: 00	
Standard Timing Identification #2		16: 04 17: 0d 18: 01 19: 03 20: 68 21: 1f 22: 17 23: ba	
Horizontal active pixels	: 800	24: e8 25: 9e 26: a8 27: a1 28: 54 29: 46 30: 99 31: 24	
Aspect Ratio	: 4:3	32: 0e 33: 48 34: 4c 35: ad 36: ee 37: 00 38: 31 39: 59	
Refresh Rate	: 85	40: 45 41: 59 42: 61 43: 59 44: 81 45: 80 46: 31 47: 68	
Standard Timing Identification #3		48: 45 49: 68 50: 81 51: 40 52: 71 53: 4f 54: d6 55: 09	
Horizontal active pixels	: 1024	56: 80 57: a0 58: 20 59: 5e 60: 63 61: 10 62: 10 63: 60	
Aspect Ratio	: 4:3	64: 52 65: 08 66: 32 67: e6 68: 10 69: 00 70: 00 71: 1a	
Refresh Rate	: 85	72: 00 73: 00 74: 00 75: ff 76: 00 77: 20 78: 42 79: 5a	
Standard Timing Identification #4		80: 20 81: 20 82: 31 83: 32 84: 33 85: 34 86: 35 87: 36	
Horizontal active pixels	: 1280	88: 0a 89: 20 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50	
Aspect Ratio	: 5:4	96: 48 97: 49 98: 4c 99: 49 100: 50 101: 53 102: 20 103: 31	
Refresh Rate	: 60	104: 30 105: 37 106: 54 107: 35 108: 00 109: 00 110: 00 111: fd	
		112: 00 113: 32 114: a0 115: 1e 116: 47 117: 0b 118: 00 119: 0a	
		120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: 74	

Hex Data of DDC2B

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.....
EDID log file for LG tube
.....
Vendor/Product Identification
  ID Manufacturer Name      : PHL
  ID Product Code           : E013 (HEX.)
  ID Serial Number          : 1E240 (HEX.)
  Week of Manufacture       : 4
  Year of Manufacture        : 2003

EDID Version, Revision
  Version                   : 1
  Revision                  : 3

Basic Display Parameters/Features
  Video Input Definition    : Analog Video Input
                             0.700V/0.000V (0.70Vpp)
                             without Blank-to-Black Setup
                             Separate Sync
                             without Composite Sync
                             without Sync on Green
                             no Serration required

  Maximum H Image Size      : 31
  Maximum V Image Size      : 23

  Display Transfer Characteristic (gamma) : 2.83

  Feature Support (DPMS)    : Standby
                             Suspend
                             Active Off

  Display Type              : RGB color display

Color Characteristics
  Red X coordinate          : 0.636
  Red Y coordinate          : 0.327
  Green X coordinate        : 0.278
  Green Y coordinate        : 0.6
  Blue X coordinate         : 0.145
  Blue Y coordinate         : 0.064
  White X coordinate        : 0.283
  White Y coordinate        : 0.297

Established Timings
  Established Timings I     : 720 x 400 @70Hz (IBM,VGA)
                             640 x 480 @60Hz (IBM,VGA)
                             640 x 480 @72Hz (VESA)
                             640 x 480 @75Hz (VESA)
                             800 x 600 @60Hz (VESA)
  Established Timings II    : 800 x 600 @72Hz (VESA)
                             800 x 600 @75Hz (VESA)
                             832 x 624 @75Hz (Apple,Mac II)
                             1024 x 768 @60Hz (VESA)
                             1024 x 768 @70Hz (VESA)
                             1024 x 768 @75Hz (VESA)

  Manufacturer's timings   :
Standard Timing Identification #1
  Horizontal active pixels  : 640
  Aspect Ratio              : 4:3
  Refresh Rate              : 85

Standard Timing Identification #2
  Horizontal active pixels  : 800
  Aspect Ratio              : 4:3
  Refresh Rate              : 85

Standard Timing Identification #3
  Horizontal active pixels  : 1024
  Aspect Ratio              : 4:3
  Refresh Rate              : 85

Standard Timing Identification #4
  Horizontal active pixels  : 1280
  Aspect Ratio              : 5:4
  Refresh Rate              : 60

```

```

Standard Timing Identification #5
  Horizontal active pixels  : 640
  Aspect Ratio              : 4:3
  Refresh Rate              : 100

Standard Timing Identification #6
  Horizontal active pixels  : 800
  Aspect Ratio              : 4:3
  Refresh Rate              : 100

Standard Timing Identification #7
  Horizontal active pixels  : 1280
  Aspect Ratio              : 4:3
  Refresh Rate              : 60

Standard Timing Identification #8
  Horizontal active pixels  : 1152
  Aspect Ratio              : 4:3
  Refresh Rate              : 75

Detailed Timing #1
  Pixel Clock (MHz)        : 25.18
  H Active (pixels)        : 640
  H Blanking (pixels)      : 160
  V Active (lines)         : 350
  V Blanking (lines)       : 99
  H Sync Offset (F Porch) (pixels) : 16
  H Sync Pulse Width (pixels) : 96
  V Sync Offset (F Porch) (lines) : 37
  V Sync Pulse Width (lines) : 2
  H Image Size (mm)        : 306
  V Image Size (mm)        : 230
  H Border (pixels)        : 0
  V Border (lines)         : 0
  Flags                    : Non-interlaced
                             Normal Display, No stereo
                             Digital Separate sync.
                             Negative Vertical Sync.
                             Positive Horizontal Sync.

Monitor Descriptor #2
  Serial Number            : BZ 123456

Monitor Descriptor #3
  Monitor Name             : PHILIPS 107T5

Monitor Descriptor #4
  Monitor Range Limits
  Min. Vt rate Hz         : 50
  Max. Vt rate Hz         : 160
  Min. Horiz. rate kHz    : 30
  Max. Horiz. rate kHz    : 71
  Max. Supported Pixel     : 110

No secondary GTF timing formula supported.

```

```

Extension Flag            : 0
Check sum                 : 9B (HEX.)
.....
EDID data (128 bytes) for LG tube
.....
0:00 1:f 2:f 3:f 4:f 5:f 6:f 7:00
8:41 9:0c 10:13 11:e0 12:40 13:e2 14:01 15:00
16:04 17:0d 18:01 19:03 20:68 21:11 22:17 23:b7
24:e8 25:16 26:28 27:a2 28:53 29:47 30:99 31:25
32:10 33:48 34:4c 35:a0 36:ee 37:00 38:31 39:59
40:45 41:59 42:61 43:59 44:81 45:80 46:31 47:68
48:45 49:68 50:81 51:40 52:71 53:4f 54:d6 55:09
56:80 57:a0 58:20 59:5e 60:63 61:10 62:10 63:60
64:52 65:08 66:32 67:e6 68:10 69:00 70:00 71:1a
72:00 73:00 74:00 75:1f 76:00 77:20 78:42 79:5a
80:20 81:20 82:31 83:32 84:33 85:34 86:35 87:36
88:0a 89:20 90:00 91:00 92:00 93:fc 94:00 95:50
96:48 97:49 98:4c 99:49 100:50 101:53 102:20 103:31
104:30 105:37 106:54 107:35 108:00 109:00 110:00 111:fd
112:00 113:32 114:a0 115:1e 116:47 117:0b 118:00 119:0a
120:20 121:20 122:20 123:20 124:20 125:20 126:00 127:9b

```

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```

.....
EDID log file for SDI tube
.....
Vendor/Product Identification
  ID Manufacturer Name      : PHL
  ID Product Code           : E013 (HEX.)
  ID Serial Number          : 1E240 (HEX.)
  Week of Manufacture       : 4
  Year of Manufacture        : 2003

EDID Version, Revision
  Version                   : 1
  Revision                  : 3

Basic Display Parameters/Features
  Video Input Definition    : Analog Video Input
                             0.700V/0.000V (0.70Vpp)
                             without Blank-to-Black Setup
                             Separate Sync
                             without Composite Sync
                             without Sync on Green
                             no Serration required

  Maximum H Image Size      : 31
  Maximum V Image Size      : 23

  Display Transfer Characteristic (gamma) : 2.9

  Feature Support (DPMS)    : Standby
                             Suspend
                             Active Off

  Display Type              : RGB color display

Color Characteristics
  Red X coordinate          : 0.645
  Red Y coordinate          : 0.316
  Green X coordinate        : 0.265
  Green Y coordinate        : 0.606
  Blue X coordinate         : 0.143
  Blue Y coordinate         : 0.058
  White X coordinate        : 0.283
  White Y coordinate        : 0.297

Established Timings
  Established Timings I     : 720 x 400 @70Hz (IBM,VGA)
                             640 x 480 @60Hz (IBM,VGA)
                             640 x 480 @72Hz (VESA)
                             640 x 480 @75Hz (VESA)
                             800 x 600 @60Hz (VESA)
  Established Timings II    : 800 x 600 @72Hz (VESA)
                             800 x 600 @75Hz (VESA)
                             832 x 624 @75Hz (Apple,Mac II)
                             1024 x 768 @60Hz (VESA)
                             1024 x 768 @70Hz (VESA)
                             1024 x 768 @75Hz (VESA)

  Manufacturer's timings   :
Standard Timing Identification #1
  Horizontal active pixels  : 640
  Aspect Ratio              : 4:3
  Refresh Rate              : 85

Standard Timing Identification #2
  Horizontal active pixels  : 800
  Aspect Ratio              : 4:3
  Refresh Rate              : 85

Standard Timing Identification #3
  Horizontal active pixels  : 1024
  Aspect Ratio              : 4:3
  Refresh Rate              : 85

Standard Timing Identification #4
  Horizontal active pixels  : 1280
  Aspect Ratio              : 5:4
  Refresh Rate              : 60

```

```

Standard Timing Identification #5
  Horizontal active pixels  : 640
  Aspect Ratio              : 4:3
  Refresh Rate              : 100

Standard Timing Identification #6
  Horizontal active pixels  : 800
  Aspect Ratio              : 4:3
  Refresh Rate              : 100

Standard Timing Identification #7
  Horizontal active pixels  : 1280
  Aspect Ratio              : 4:3
  Refresh Rate              : 60

Standard Timing Identification #8
  Horizontal active pixels  : 1152
  Aspect Ratio              : 4:3
  Refresh Rate              : 75

Detailed Timing #1
  Pixel Clock (MHz)        : 25.18
  H Active (pixels)        : 640
  H Blanking (pixels)      : 160
  V Active (lines)         : 350
  V Blanking (lines)       : 99
  H Sync Offset (F Porch) (pixels) : 16
  H Sync Pulse Width (pixels) : 96
  V Sync Offset (F Porch) (lines) : 37
  V Sync Pulse Width (lines) : 2
  H Image Size (mm)        : 306
  V Image Size (mm)        : 230
  H Border (pixels)        : 0
  V Border (lines)         : 0
  Flags                    : Non-interlaced
                             Normal Display, No stereo
                             Digital Separate sync.
                             Negative Vertical Sync.
                             Positive Horizontal Sync.

Monitor Descriptor #2
  Serial Number            : BZ 123456

Monitor Descriptor #3
  Monitor Name             : PHILIPS 107T5

Monitor Descriptor #4
  Monitor Range Limits
  Min. Vt rate Hz         : 50
  Max. Vt rate Hz         : 160
  Min. Horiz. rate kHz    : 30
  Max. Horiz. rate kHz    : 71
  Max. Supported Pixel     : 110

No secondary GTF timing formula supported.
Extension Flag            : 0
Check sum                 : F1 (HEX.)

```

```

.....
EDID data (128 bytes) for SDI tube
.....
0:00 1:f 2:f 3:f 4:f 5:f 6:f 7:00
8:41 9:0c 10:13 11:e0 12:40 13:e2 14:01 15:00
16:04 17:0d 18:01 19:03 20:68 21:11 22:17 23:be
24:e8 25:0d 26:b8 27:a5 28:51 29:43 30:9b 31:24
32:0e 33:48 34:4c 35:a0 36:ee 37:00 38:31 39:59
40:45 41:59 42:61 43:59 44:81 45:80 46:31 47:68
48:45 49:68 50:81 51:40 52:71 53:4f 54:d6 55:09
56:80 57:a0 58:20 59:5e 60:63 61:10 62:10 63:60
64:52 65:08 66:32 67:e6 68:10 69:00 70:00 71:1a
72:00 73:00 74:00 75:1f 76:00 77:20 78:42 79:5a
80:20 81:20 82:31 83:32 84:33 85:34 86:35 87:36
88:0a 89:20 90:00 91:00 92:00 93:fc 94:00 95:50
96:48 97:49 98:4c 99:49 100:50 101:53 102:20 103:31
104:30 105:37 106:54 107:35 108:00 109:00 110:00 111:fd
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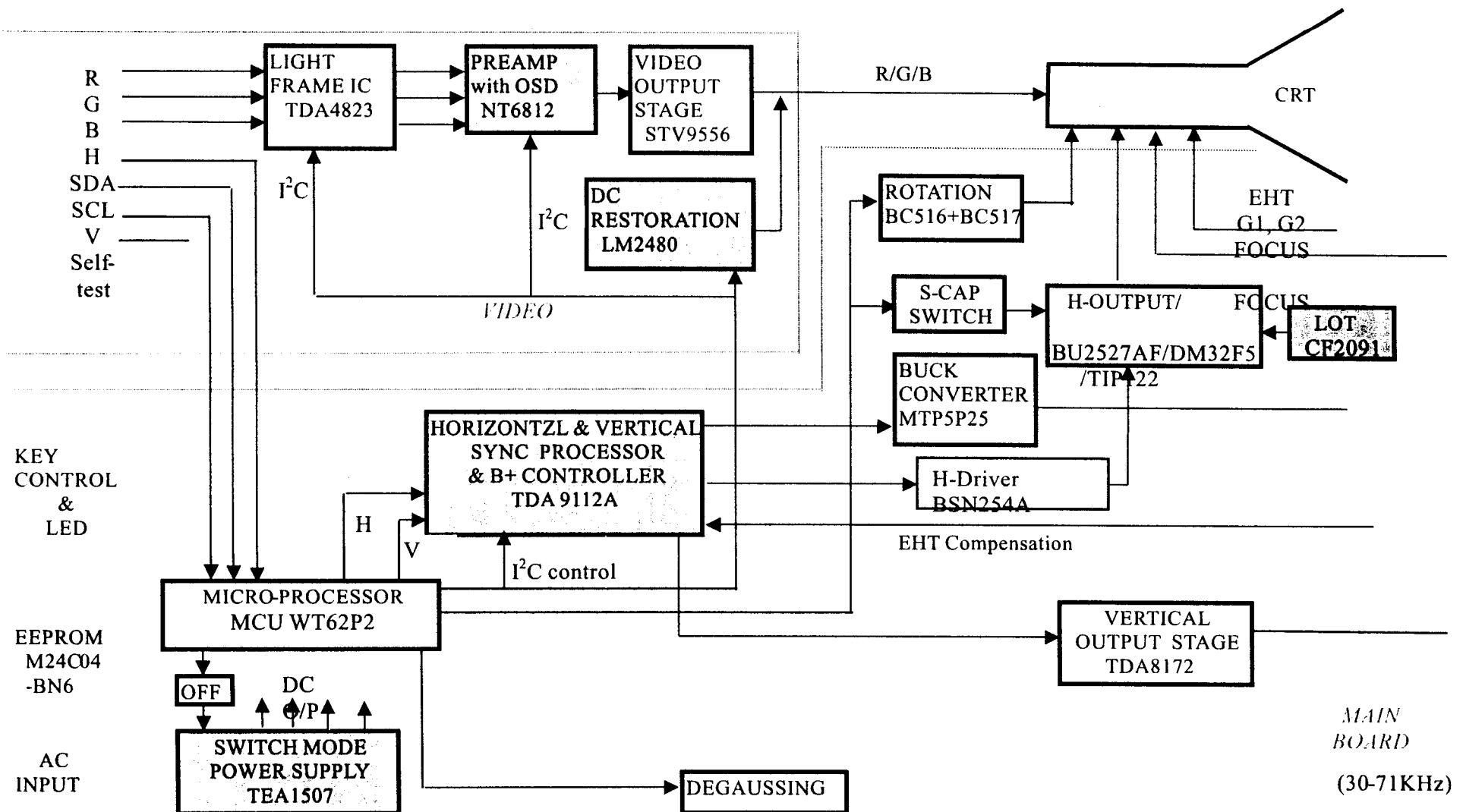
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Function Block of V30 107T5

107T5

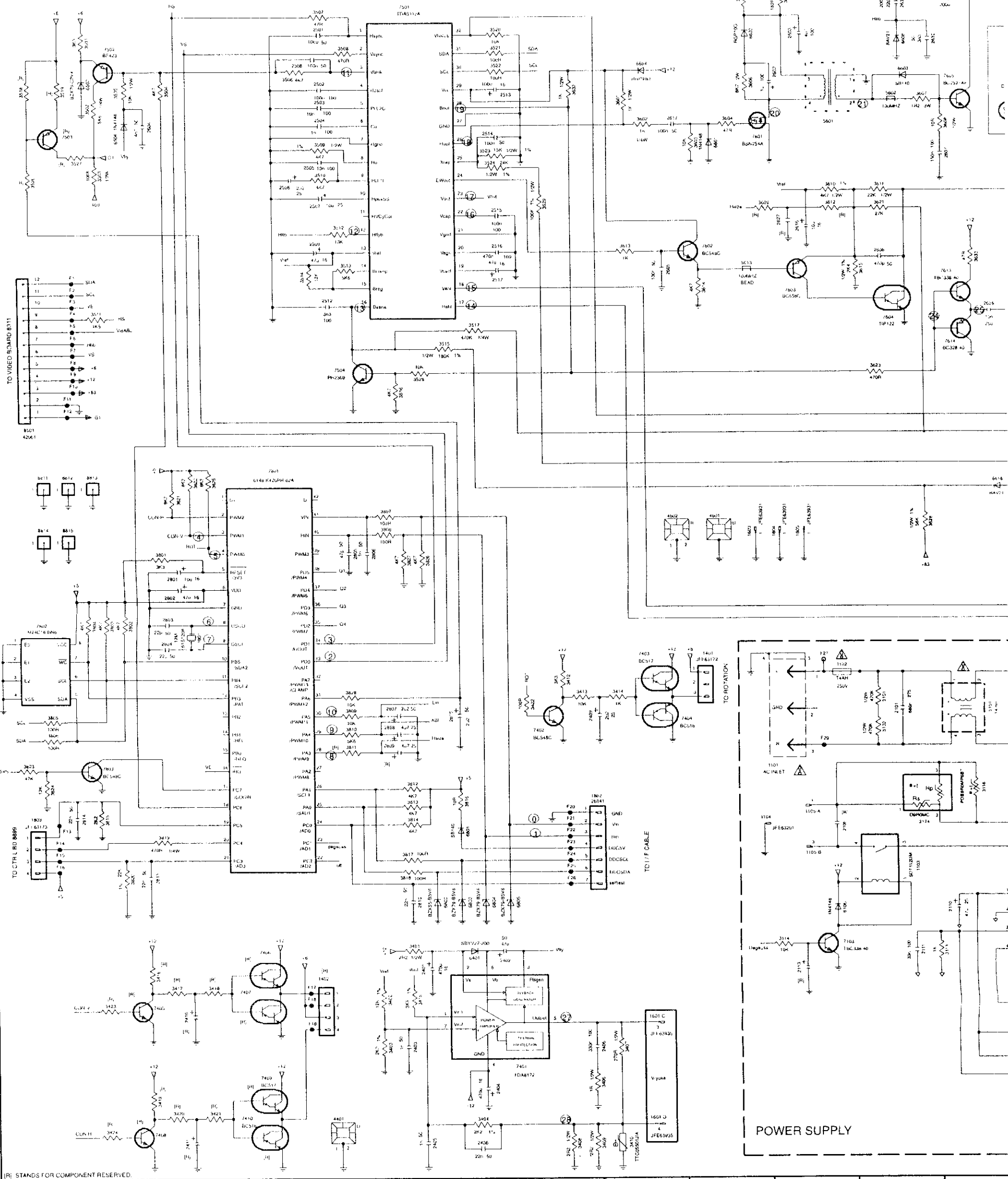
29

Go to cover page



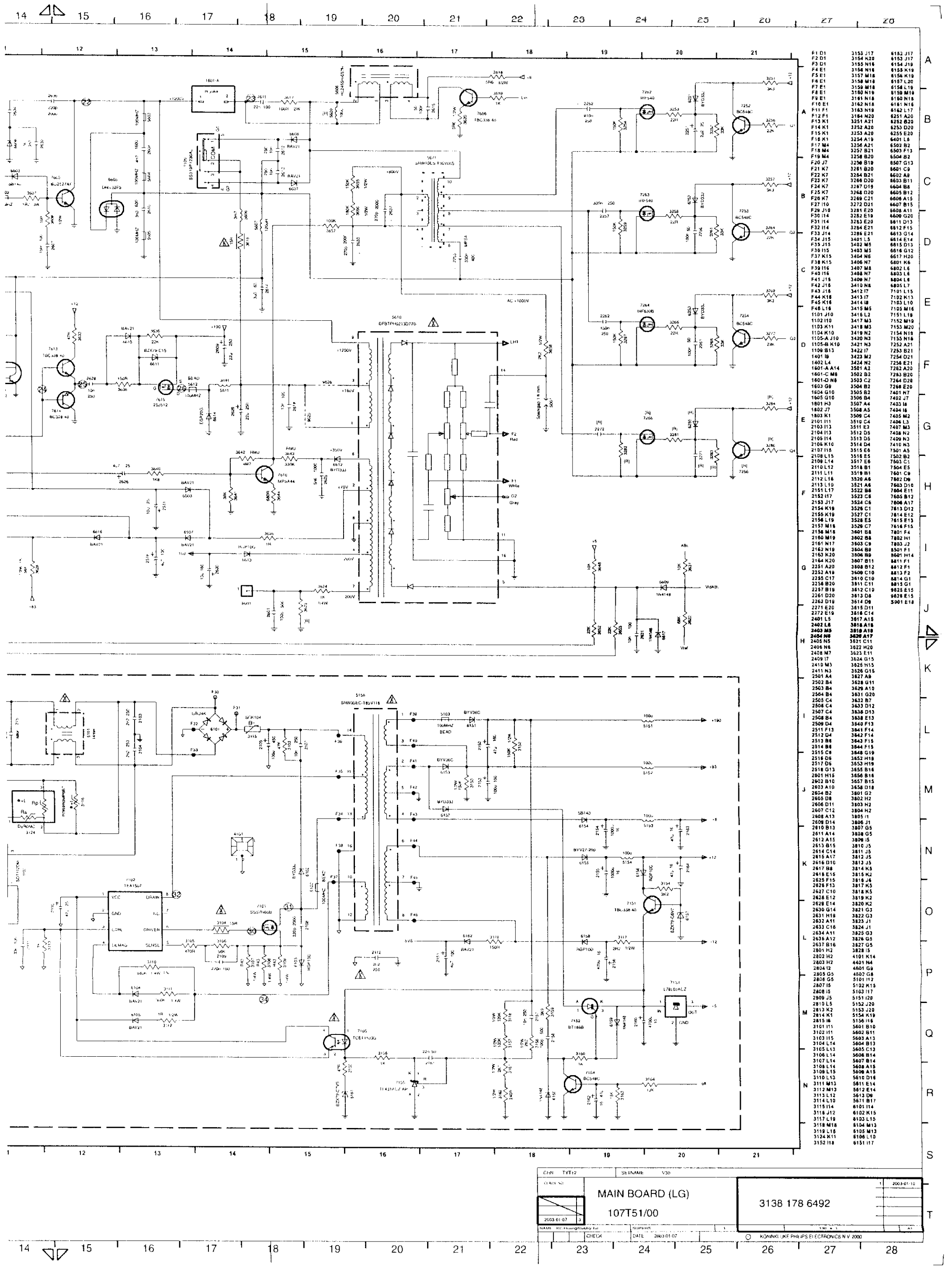
MAIN PCB

SB: 57251x1
PB: 57271



V30 10/75 CRT Deviation list

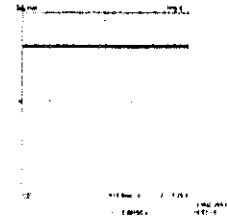
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2252	9100 250V MPA	8100 250V MPA	8100 250V MPA
2255	3300 400V MPA	3000 400V MPA	3000 400V MPA
2633	2700 2K V XTR	2400 2K V XTR	2400 2K V XTR
2637	2700 2K V XTR	2400 2K V XTR	2400 2K V XTR
3408	2700 1.2V	2400 1.2V	2400 1.2V
3409	2700 1.2V	2400 1.2V	2400 1.2V



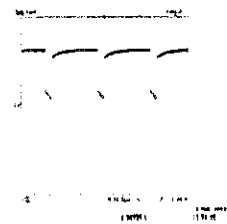
CHN	TYT12	SEI NAME	V30
CLASS NO.	MAIN BOARD (LG)		
2503 01-07	107T51/00		
NAME	3138 178 6492	DATE	2003-01-07
CHECK	KORVANKI LK PHILIPS ELECTRONICS N.V. 2000		

[Go to cover page](#)

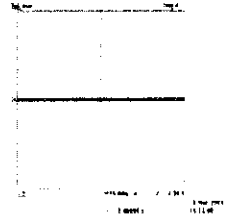
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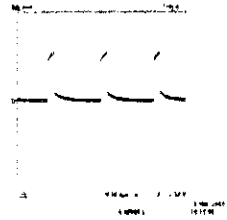
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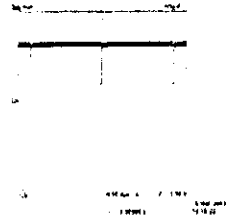
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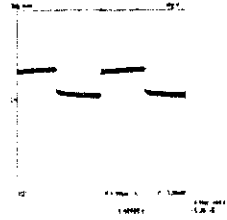
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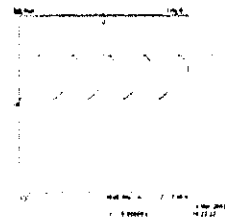
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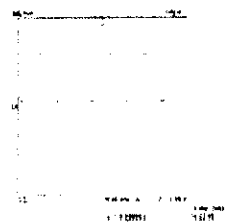
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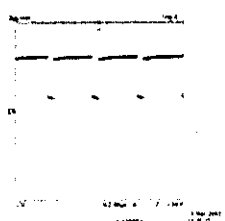
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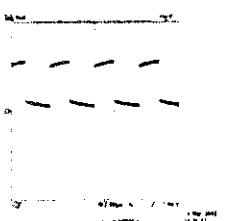
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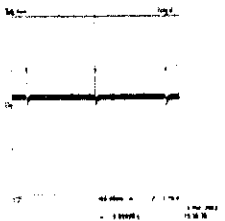
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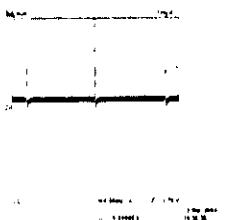
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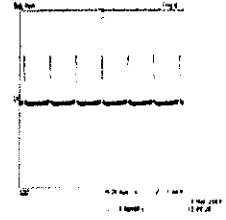
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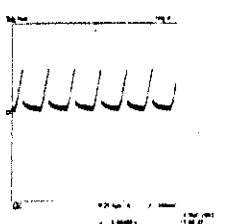
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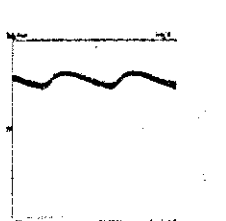
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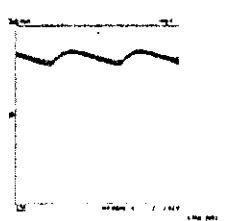
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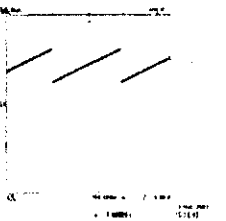
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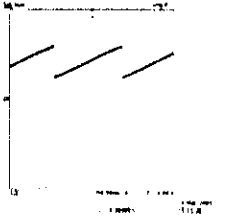
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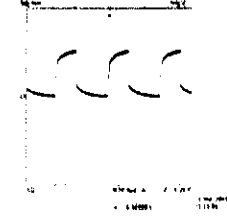
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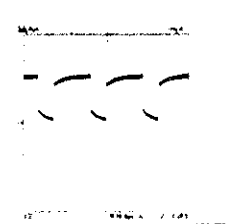
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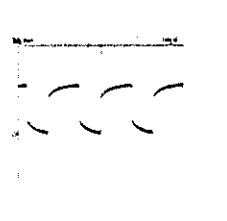
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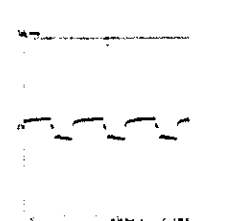
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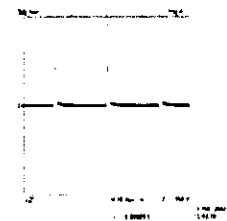
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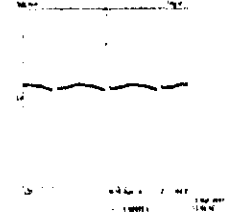
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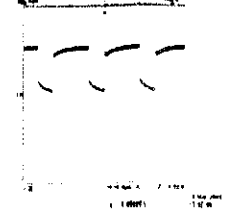
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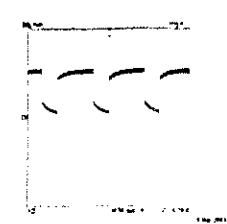
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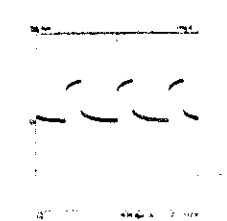
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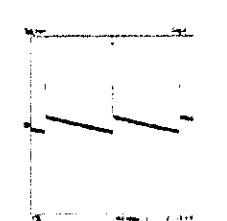
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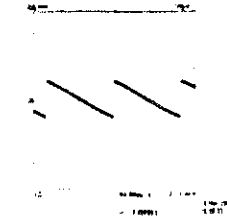
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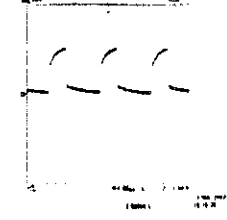
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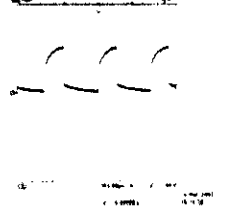
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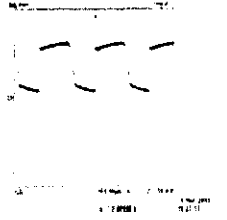
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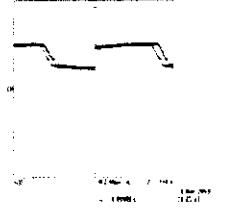
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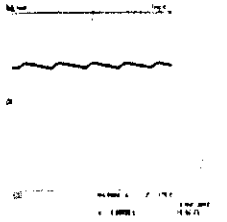
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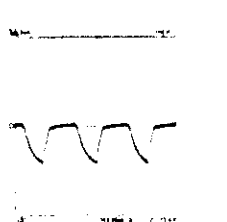
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33.



34.



C. B. A. of Main board

107T5

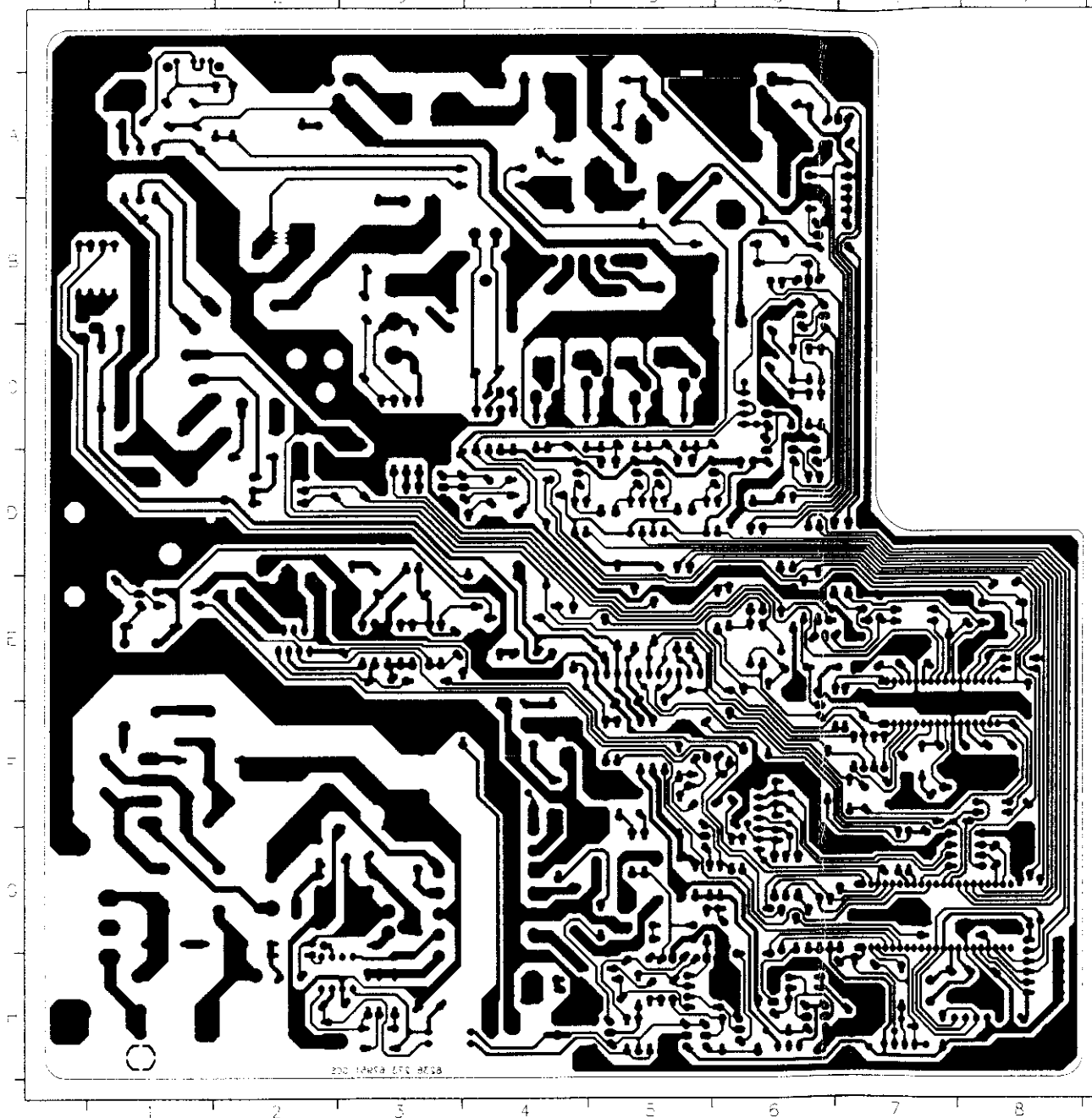
33

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PHILIPS

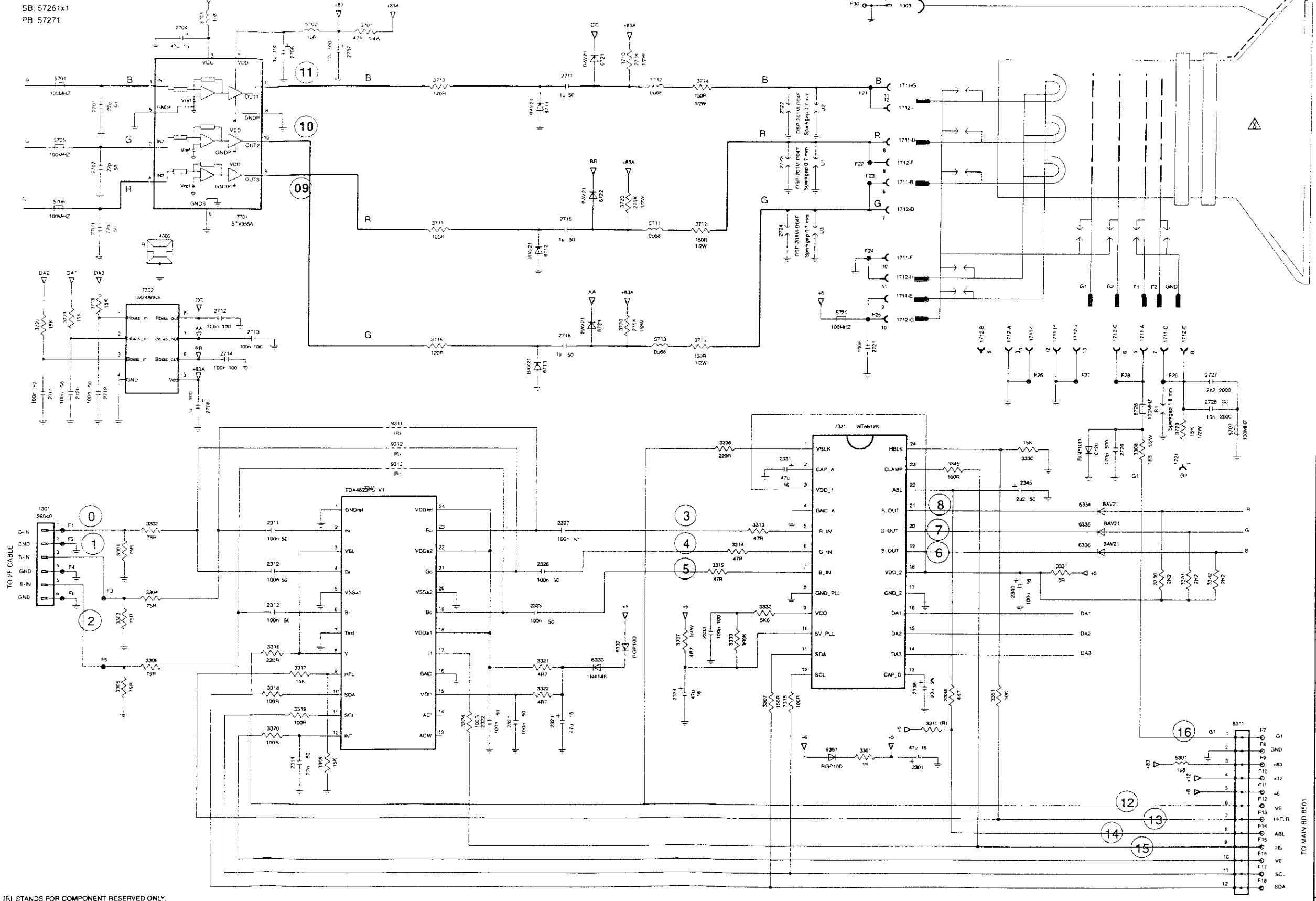


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CV: TX112-		33 107T5	
CLASS NO 3XX000		PWR+DEF Board	
V30 CRT MTR		3138 103 5725	
NAME: KC HUNG/2	DATE: 2003-07-13	10	132 2
CHECK	DATE: 2003-07-13	10	132 2
Philips electronics N.V.			

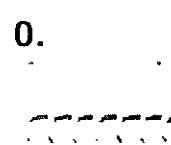
VIDEO PCB
SB: 57261x1
PB: 57271



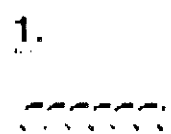
[R] STANDS FOR COMPONENT RESERVED ONLY.

- F1 F1 3331 F12
- F2 F1 3332 G9
- F3 G2 3333 G8
- F4 F1 3334 H11
- F5 G2 3335 H9
- F6 G1 3336 E8
- F7 H14 3337 G8
- F8 H14 3338 F13
- F9 H14 3339 F13
- S1 E13 3340 F13
- U1 B9 3341 F13
- U2 A9 3342 E11
- U3 C9 3343 H10
- F10 H14 3344 A4
- F11 H14 3345 A7
- F12 H14 3346 C5
- F13 H14 3347 C8
- F14 H14 3348 A5
- F15 H14 3349 A8
- F16 H14 3350 D5
- F17 H14 3351 D8
- F18 H14 3352 D2
- F19 A10 3353 B7
- F20 B10 3354 D1
- F21 B10 3355 D1
- F22 B10 3356 D1
- F23 C10 3357 E13
- F24 D10 3358 D7
- F25 D10 3359 C2
- F26 D12 3360 H13
- F27 D12 3361 A3
- F28 D12 3362 A4
- F29 D13 3363 F12
- F30 A10 3364 F12
- F31 F1 3365 B1
- 3303 A10 3366 C1
- 1711-A D13 3367 E14
- 1711-B B10 3368 C7
- 1711-C D13 3369 A7
- 1711-D B10 3370 D8
- 1711-E C10 3371 D9
- 1711-F C10 3372 E13
- 1711-G A10 3373 G7
- 1711-H D11 3374 F12
- 1712-A D11 3375 F12
- 1712-B D11 3376 F12
- 1712-C D12 3377 H9
- 1712-D C10 3378 C6
- 1712-E D10 3379 D6
- 1712-F B10 3380 B6
- 1712-G B10 3381 A7
- 1712-H C10 3382 B7
- 1712-I A10 3383 D7
- 1712-J D12 3384 E12
- 1721 E13 3385 E4
- 2301 H10 3386 E10
- 2311 F3 3387 A2
- 2312 F3 3388 C2
- 2313 G3 3389 C2
- 2314 H4 3390 E11
- 2321 H6 3391 A2
- 2322 H6 3392 B2
- 2323 H6 3393 C2
- 2324 G6 3394 C2
- 2325 F6 3395 D1
- 2326 F7 3396 A4
- 2327 F7 3397 A4
- 2331 E8 3398 E3
- 2333 G8 3399 A7
- 2334 H8 3340 D3
- 2335 H10 3341 D3
- 2340 G11 3342 D3
- 2345 E11 3343 C7
- 2701 A2 3344 D7
- 2702 B2 3345 D2
- 2703 C2 3346 D2
- 2704 A2 3347 D2
- 2705 D1 3348 A4
- 2706 A4 3349 A4
- 2707 A4 3350 E3
- 2708 E3 3351 A7
- 2711 A7 3352 D3
- 2712 D3 3353 D3
- 2713 D3 3354 D3
- 2714 D3 3355 C7
- 2715 C7 3356 D7
- 2716 D7 3357 D2
- 2717 D2 3358 D1
- 2718 D1 3359 D10
- 2721 D10 3360 A9
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- 2724 C9 3363 E12
- 2725 E12 3364 D13
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- 3301 F2 3368 G2
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- 3307 H2 3374 H2
- 3308 E13 3375 H2
- 3309 H4 3376 H2
- 3311 H10 3377 H2
- 3313 F9 3378 H2
- 3314 F8 3379 H2
- 3315 F8 3380 H2
- 3316 G3 3381 G4
- 3317 G4 3382 H3
- 3318 H3 3383 H4
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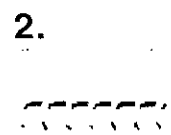
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CLASS NO	VIDEO BOARD		
2003-01-07	107T51/00		
NAME	KC Huang/Deby Tai	SUPERS	1
CHECK	DATE	2003-01-07	130 = 1
KONINKRIJKE PHILIPS ELECTRONICS N.V. 2000			A2

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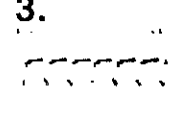
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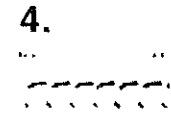
Handwriting practice lines

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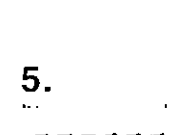
Handwriting practice lines

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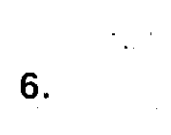
Handwriting practice lines

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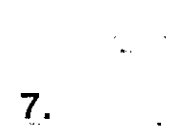
Handwriting practice lines

5. 

Handwriting practice lines

6. 

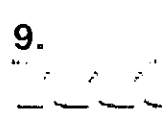
Handwriting practice lines

7. 

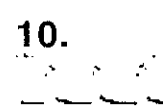
Handwriting practice lines

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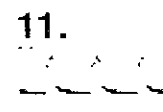
Handwriting practice lines

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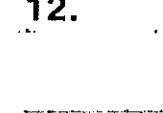
Handwriting practice lines

10. 

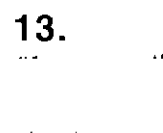
Handwriting practice lines

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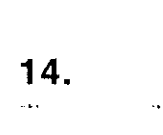
Handwriting practice lines

12. 

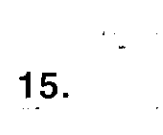
Handwriting practice lines

13. 

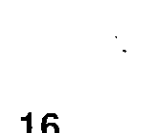
Handwriting practice lines

14. 

Handwriting practice lines

15. 

Handwriting practice lines

16. 

Handwriting practice lines

Handwriting practice lines

Handwriting practice lines

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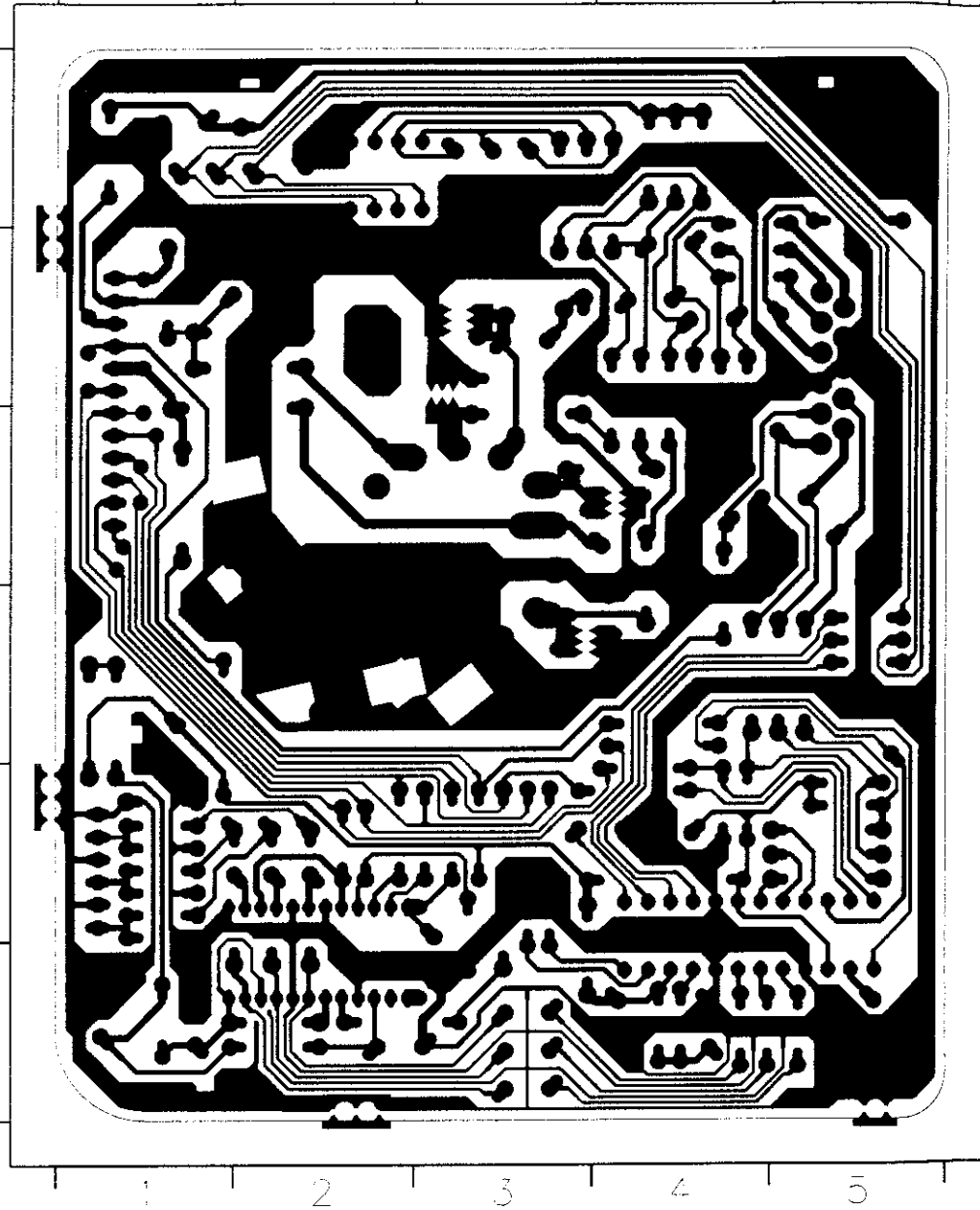
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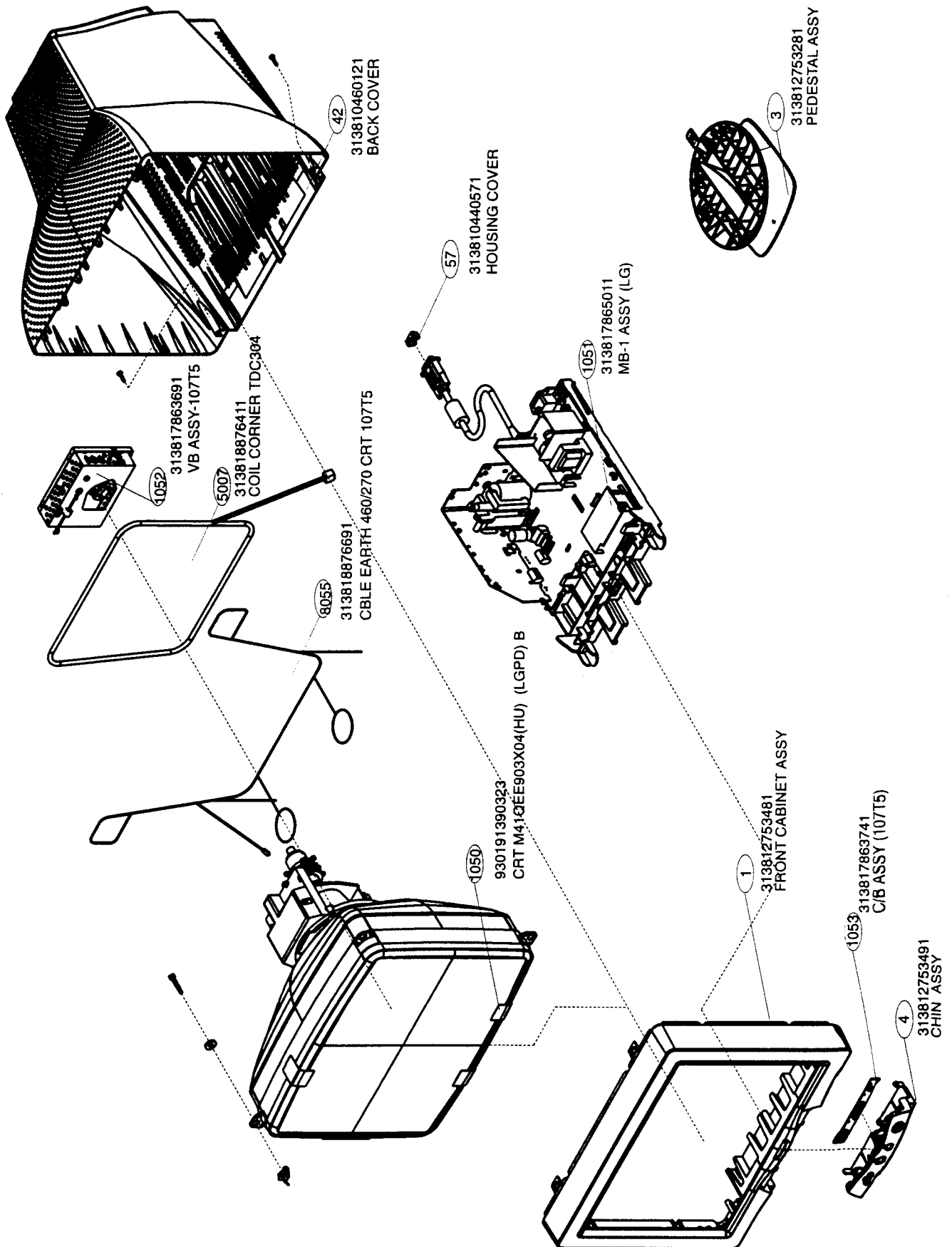
CLASS NO 3XX000		Video Board		2003-07-10	
2003-07-10		30 CRT VTR		3138 103 5726	
NAME: KO Huang/G. To		SUPERVISOR		3138 103 5726	
CHECK		DATE: 2003-07-10		Philips Electronics N.V.	

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1.0 Introduction

This document is related to the 17" AUTOSCAN (VGA above and Max. resolution 1280X1024 by 60HZ refresh) color monitor for world-wide destination.

2.0 General description

The AUTOSCAN analog color monitor is specified as a display peripheral within an IBM PC, PS/2, VGA and advance VGA compatible system.

The AUTOSCAN analog color monitor is to operate at horizontal line rates between 30 to 71 KHz and refreshment rate between 50 to 160 Hz, can be applied to all RGB analog computers within this scanning frequencies.

The AUTOSCAN analog color monitor is intended to be a finished product, basically a display device mounted inside a plastic enclosure which provides the aesthetic mechanical, ergonomic and safety requirements.

2.1 General condition

The unit will produce a usable image after switching-on, measurements are to be carried out with a full stabilized set after 30 minutes warm-up at room temperature of 25.0 C. Repetitive power on/off cycles are allowed though should be avoided within 4 sec.

3.0 Electrical characteristics

3.1 Signal interface

The AUTOSCAN analog color display has an analog video interface to operates at a multi-frequencies timing in several display modes.

3.1.1 Input requirements

A. Input signals

Video : Analog level
Sync. : Separate sync. with TTL level
Polarity : Positive or negative

B. Signal input level

Video : 0.7 Vp-p 75 ohms (for individual of R, G and B signals must not deviate 0.015 Vp-p from each other for balance of white pattern)
Sync : TTL level
(between 0 and 0.6 V to be considered as low level, between 2.3 and 5.0 V as high level)

C. Impedance

Video : Terminated with 75 ohms
Sync : Terminated with 4.7K ohms pull down resistors.



3.1.2 Signals input

The input video signals are applied to the display device through a video cable which is fixed to the monitor (standard cable length 1.45M).

Video input cable :
15 pin D-shell male connector type AMP 211350-1(3 rows) or equivalent, with pin assignment as follows :

Pin assignment of 15P D-SUB connector

Pin nbr.	Assignment
P1	Red video input
P2	Green video input
P3	Blue video input
P4	GND
P5	For selftest (PC Ground)
P6	Red video ground
P7	Green video ground
P8	Blue video ground
P9	Not connected -- No pin
P10	Sync ground
P11	GND
P12	Bi-directional Data (SDA)
P13	H SYNC
P14	V SYNC (VCLK)
P15	Data clock (SCL)

3.1.3 Factory preset modes:

Factory preset modes : 8

	Resolution	H. freq.	V. freq.	H.	V.
1.	720 x 400	31.5 KHz	70Hz (VGA)	-	+
2.	640 x 480	31.47 KHz	60Hz (VGA)	-	-
3.	640 x 480	43.3 KHz	85Hz (VESA)	-	-
4.	800 x 600	46.9 KHz	75Hz (VESA)	+	+
5.	800 x 600	53.67 KHz	85Hz (VESA)	+	+
6.	1024 x 768	60.0 KHz	75Hz (VESA)	+	+
7.	1024 x 768	68.7 KHz	85Hz (VESA)	+	+
8.	1280 x 1024	64.0 KHz	60Hz (VESA)	+	+

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Factory preload modes : 14

	Resolution	H. freq.	V. freq.
9.	640 x 350	31.5 KHz	70 Hz
10.	640 x 350	37.9 KHz	85 Hz
11.	640 x 480	37.5 KHz	75 Hz
12.	640 x 480	37.9 KHz	72.8Hz
13.	640 x 480	50.6 KHz	100 Hz
14.	720 x 400	37.9 KHz	85 Hz
15.	800 x 600	37.9 KHz	60 Hz
16.	800 x 600	48.1 KHz	72 Hz
17.	800 x 600	63.9 KHz	100 Hz
18.	832 x 624	49.7 KHz	75 Hz
19.	1024 x 468	48.4 KHz	60 Hz
20.	1024 x 768	56.5 KHz	70 Hz
21.	1152 x 864	67.5 KHz	75 Hz
22.	1280 x 960	60 KHz	60 Hz

3.2 Timing requirements

The AUTOSCAN color monitor must be capable of displaying standard resolutions within the vertical(refresh) frequency range of 50 to 160 Hz and horizontal scan range of 30 to 71 KHz.

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TIMING FOR V30 GS4 107T5 71K COLOR MONITOR

REFERENCE PATTERN GENERATOR : CHROMA 2135

* According VESA version 1.0 release 0.6p

Factory preset modes

TABLE 1: 31.469 KHz/70.087 Hz, 720 X 400, pixel=28.325 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 31.774 us	Total size = 14.268 ms
Display size = 25.422 us	Display size = 12.711 ms
Rear porch = 1.907 us	Rear porch = 1.112 ms
Sync width = 3.813 us	Sync width = 0.064 ms
Sync polarity = -	Sync polarity = +

TABLE 2: 31.469KHz/59.940 Hz, 640 X 480, pixel=25.175 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 31.778 us	Total size = 16.683 ms
Display size = 25.422 us	Display size = 15.253 ms
Rear porch = 1.907 us	Rear porch = 1.049 ms
Sync width = 3.813 us	Sync width = 0.064 ms
Sync polarity = -	Sync polarity = -

TABLE 3: 43.269KHz/85.008 Hz, 640 X 480, pixel=36.000 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 23.111 us	Total size = 11.764 ms
Display size = 17.778 us	Display size = 11.093 ms
Rear porch = 2.222 us	Rear porch = 0.578 ms
Sync width = 1.556 us	Sync width = 0.069 ms
Sync polarity = -	Sync polarity = -

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TABLE 4: 46.875 KHz/75 Hz, 800 X 600, pixel=49.500 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 21.333 us	Total size = 13.333 ms
Display size = 16.162 us	Display size = 12.800 ms
Rear porch = 3.232 us	Rear porch = 0.448 ms
Sync width = 1.616 us	Sync width = 0.064 ms
Sync polarity = +	Sync polarity = +

TABLE 5: 53.674 KHz/85.061 Hz, 800 X 600, pixel=56.250 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 18.631 us	Total size = 11.756 ms
Display size = 14.222 us	Display size = 11.179 ms
Rear porch = 2.702 us	Rear porch = 0.503 ms
Sync width = 1.138 us	Sync width = 0.056 ms
Sync polarity = +	Sync polarity = +

TABLE 6: 60.03 KHz/75 Hz, 1024 X 768, pixel=78.750 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 16.660 us	Total size = 13.328 ms
Display size = 13.003 us	Display size = 12.795 ms
Rear porch = 2.235 us	Rear porch = 0.466 ms
Sync width = 1.219 us	Sync width = 0.050 ms
Sync polarity = +	Sync polarity = +

TABLE 7: 63.981 KHz/60 Hz, 1280 X 1024, pixel=108 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 15.630 us	Total size = 16.661 ms
Display size = 11.852 us	Display size = 16.005 ms
Rear porch = 2.296 us	Rear porch = 0.594 ms
Sync width = 1.037 us	Sync width = 0.047 ms
Sync polarity = +	Sync polarity = +

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TABLE 8: 68.677 KHz/85 Hz, 1024 X 768, pixel=94.500 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 14.561 us	Total size = 11.765 ms
Display size = 10.836 us	Display size = 11.183 ms
Rear porch = 2.201 us	Rear porch = 0.524 ms
Sync width = 1.016 us	Sync width = 0.044 ms
Sync polarity = +	Sync polarity = +

Factory preload modes

TABLE 9: 31.469KHz/70.087 Hz, 640 X 350, pixel=25.175MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 31.778 us	Total size = 14.268 ms
Display size = 25.422 us	Display size = 11.122 ms
Rear porch = 1.907 us	Rear porch = 1.907 ms
Sync width = 3.813 us	Sync width = 0.064 ms
Sync polarity = +	Sync polarity = -

TABLE 10: 37.861KHz/85.08 Hz, 640 X 350, pixel=31.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 26.413 us	Total size = 11.754 ms
Display size = 20.317 us	Display size = 9.244 ms
Rear porch = 3.048 us	Rear porch = 1.585 ms
Sync width = 2.032 us	Sync width = 0.079 ms
Sync polarity = +	Sync polarity = -

TABLE 11: 37.5KHz/75 Hz, 640 X 480, pixel=31.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 26.667 us	Total size = 13.333 ms
Display size = 20.317 us	Display size = 12.8 ms
Rear porch = 3.810 us	Rear porch = 0.427 ms
Sync width = 2.032 us	Sync width = 0.08 ms
Sync polarity = -	Sync polarity = -

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GENERAL PRODUCT SPECIFICATION

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TABLE 12: 37.861KHz/72.809 Hz, 640 X 480, pixel=31.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 26.413 us	Total size = 13.735 ms
Display size = 20.317 us	Display size = 12.678 ms
Rear porch = 4.064 us	Rear porch = 0.739 ms
Sync width = 1.270 us	Sync width = 0.079 ms
Sync. polarity = -	Sync. polarity = -

TABLE 13: 50.625 KHz/100.049 Hz, 640 X 480, pixel=40.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 19.752 us	Total size = 9.995 ms
Display size = 15.802 us	Display size = 9.481 ms
Rear porch = 1.975 us	Rear porch = 0.435 ms
Sync width = 1.580 us	Sync width = 0.059 ms
Sync. polarity = -	Sync. polarity = -

TABLE 14: 37.927 KHz/85.039 Hz, 720 X 400, pixel=35.5 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 26.366 us	Total size = 11.759 ms
Display size = 20.282 us	Display size = 10.546 ms
Rear porch = 3.042 us	Rear porch = 1.107 ms
Sync width = 2.028 us	Sync width = 0.079 ms
Sync. polarity = -	Sync. polarity = +

TABLE 15: 37.879 KHz/60.317 Hz, 800 X 600, pixel=40MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 26.400 us	Total size = 16.579 ms
Display size = 20.000 us	Display size = 15.840 ms
Rear porch = 2.200 us	Rear porch = 0.607 ms
Sync width = 3.200 us	Sync width = 0.106 ms
Sync. polarity = +	Sync. polarity = +

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TABLE 16: 48.077 KHz/72.188 Hz, 800 X 600, pixel=50MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 20.800 us	Total size = 13.853 ms
Display size = 16.000 us	Display size = 12.480 ms
Rear porch = 1.280 us	Rear porch = 0.478 ms
Sync width = 2.400 us	Sync width = 0.125 ms
Sync. polarity = +	Sync. polarity = +

TABLE 17: 63.92KHz/100 Hz, 800 X 600, pixel=67.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 15.644 us	Total size = 9.997 ms
Display size = 11.852 us	Display size = 9.387 ms
Rear porch = 2.370 us	Rear porch = 0.548 ms
Sync width = 0.948 us	Sync width = 0.047 ms
Sync. polarity = +	Sync. polarity = +

TABLE 18: 49.714KHz/74.534 Hz, 832 X 624, pixel=57.27MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 20.115 us	Total size = 13.417 ms
Display size = 14.528 us	Display size = 12.552 ms
Rear porch = 3.911 us	Rear porch = 0.784 ms
Sync width = 1.118 us	Sync width = 0.060 ms
Sync. polarity = -	Sync. polarity = -

TABLE 19: 48.363 KHz/60.004 Hz, 1024 X 768, pixel=65MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 20.677 us	Total size = 16.666 ms
Display size = 15.754 us	Display size = 15.880 ms
Rear porch = 2.462 us	Rear porch = 0.600 ms
Sync width = 2.092 us	Sync width = 0.124 ms
Sync. polarity = -	Sync. polarity = -

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GENERAL PRODUCT SPECIFICATION

TABLE 20: 56.476KHz/70.069 Hz, 1024 X 768, pixel=75MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 17.707 us	Total size = 14.272 ms
Display size = 13.653 us	Display size = 13.599 ms
Rear porch = 1.920 us	Rear porch = 0.513 ms
Sync width = 1.813 us	Sync width = 0.106 ms
Sync. polarity = -	Sync. polarity = -

TABLE 21: 67.5 KHz/75Hz, 1152 X 864, pixel=108MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 14.815 us	Total size = 13.333 ms
Display size = 10.667 us	Display size = 12.8 ms
Rear porch = 2.370 us	Rear porch = 0.474 ms
Sync width = 1.185 us	Sync width = 0.044 ms
Sync polarity = +	Sync polarity = +

TABLE 22: 60.0 KHz/60 Hz, 1280 X 960, pixel= 108MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 16.667 us	Total size = 16.667 ms
Display size = 11.852 us	Display size = 16.000 ms
Rear porch = 2.889 us	Rear porch = 0.600 ms
Sync width = 1.037 us	Sync width = 0.050 ms
Sync polarity = +	Sync polarity = +

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GENERAL PRODUCT SPECIFICATION

3.2.1 Horizontal scanning

Scanning frequency : 30 - 71 KHz
H-shift range : ± 10 mm Min. (for preset modes only)

3.2.2 Vertical scanning

Scanning frequency : 50 - 160 Hz
V-shift range : ± 10 mm min. (for preset modes only)

3.3 Power supply

The display device maintains the specified performance in the range described as below :

Type	Mains current	Mains Voltage	Mains freq.
230V version	1.5A Max.	90 - 264 VAC	60 +/- 3 Hz
Power consumption : 75 Watts Max. Power cord length : 1.5M Power cord type : 3 lead plug power cord with protective earth plug or IBM hooded			

3.4 Power saving management system

	Signal			Compliance Requirement	Power
	H-Sync	V-Sync	Video		
On	Active	Active	Active	Mandatory	≤ 75 W
Off	Inactive	Active	Blanked	Mandatory	≤ 2 W
Off	Active	Inactive	Blanked	Mandatory	≤ 2 W
Off	Inactive	Inactive	Blanked	Mandatory	≤ 2 W

3.5 CRT Description

This display unit employs a high resolution CRT complying with the following specifications :

Dimensions : 17 inches flat/square screen
Pitch : 0.25mm dotted with black matrix
Deflection angle : 90 degrees
Light transmission : 50%(CPT), 52.8%(LG), 52.6%(SDI)
Face treatment : AGARAS
Implosion protection : By P-Mini-rim-band.
EHT : 25.0 $\pm$ 1 KV (Ib=0)
Visible screen area : 325.1 mm x 243.8 mm
CRT Source : CPT, LG, SDI

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4.2 Image size (For preset modes only)

The dimensions of guaranteed display area to be measured along the picture center of horizontal and vertical axis of the screen as listed below: (preset modes only, refer to fig. 1)

Width : 306 ± 3 mm
Height : 230 ± 3 mm

4.3 Image centering deviation (For preset modes only)

With respect to fig. 2, the target relationships are the following :

IA- BI ≤ 5 mm IC- DI ≤ 5 mm

Note : This centering is adjustable by the end-user.

4.4 Picture shift control range (For preset modes only)

H-shift range : ± 10 mm min.
V-shift range : ± 10 mm min.

4.5 Picture tilt

With respect to Fig. 3, Tilt to be measured on extremes of center line from bezel.

IA- BI : ≤ 2 mm

4.6 Geometrical distortions (For preset modes only)

It is acceptable that pincushion, trapezoid, rhomboid, rotation and various waves distortions must remain within the limits of tolerance as in Fig. 4,
where A = B = 2.0 mm.
C = D = 2.0 mm.

The waviness of any vertical or horizontal shall be less than 1.0 mm over a 50 mm distance.

4.7 Image non-linearity (For preset modes only)

Apply cross-hatch pattern with
12 equal blocks along horizontal axis,
9 equal blocks along vertical axis. (see Fig. 1)

Overall : ≤ 10 %

Adjacent : ≤ 6 % (For 64kHz mode H ≤ 8 %)

$$\text{H. non-linearity} = \frac{X_{\text{max.}} - X_{\text{min.}}}{X_{\text{Max.}}} \times 100\%$$

$$\text{V. non-linearity} = \frac{Y_{\text{max.}} - Y_{\text{min.}}}{Y_{\text{Max.}}} \times 100\%$$

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4.8 Mis-convergence

The maximum convergence error to be measured on a white spot or white display line to represents the maximum distance between the energy centers of any two primary colors (See Fig. 6). For 31.5kHz modes B Zone : 0.4mm.

CONVERGENCE SPEC.

Zones	0.25 mm CRT
Zone C	0.15 mm
Zone A	0.25 mm
Zone B	0.35 mm

4.9 Focus check (68.7 KHZ / 85 HZ)

Adjust brightness control to center(50%) and contrast control to get 25 FL at full white pattern, then generate 1mm characters to cover the entire picture. The characters should be clearly identified in all display area. (See Fig. 8)

4.10 Luminance uniformity

condition : With full white pattern, set contrast control at maximum(100%) and brightness control at center(50%).
Brightness of the center of the display is 30 FL±5.

The Max. deviation over the screen should not exceed 25% .

4.11 White color adjustment

Based on the 1931 CIE chromatic diagram (x,y) coordinates of white display on screen center should be:

For 9300 K X = 0.283 ± 0.015

Y = 0.297 ± 0.015

For 6500 K X = 0.313 ± 0.015

Y = 0.329 ± 0.015

For sRGB X = 0.313 ± 0.015

Y = 0.329 ± 0.015

Check conditions : Set brightness control at center(50%) and contrast at maximum(100%).

For sRGB mode sRGB contrast is at Factory value.

4.12 Color tracking on full white pattern

Adjust for the luminance output from 3 to 30 FL by pressing the contrast control key (brightness control at 50%). The color co-ordinates should not deviate more than the following tolerance when compare to display center:

X= X (center) ± 0.015

Y= Y (center) ± 0.015

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TYPE		: 107T51/00			
BRAND		: PHILIPS			
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4.13 Purity

Test patterns : Full white / Red / Green / Blue.

Conditions : As stated in item 4.0, the purity must be checked under specific destinations of earth magnetic environments and the monitor must be well degaussed.

After warming-up time of 30 min., no color stains may occur in the above four patterns.

4.14 Moiré

Condition: Display a full white pattern. At any preset mode, the display size must be set as Fig.1.

The clouding effect must not rise to disturbing levels in anywhere of the screen with luminance setting from 15 to 30 FL.

4.15 Blemish

Blemish shall be in accordance with CRT specification.

5.0 Mechanical characteristics

5.1 User controls

- Power ON/OFF key
- LightFrame key
- 3 Key digital user control (OSD)

5.2 Connectors and cables

- 5.2.1 Power cord type : 3 leads plugable power cord with protective earthed plug or IBM Hooded
- Length : 1.5 m ± 50 mm (excluding connector)
- Safety requirements : See following.

Countries	Approval		
	Mains plug	Wire	Connector
Germany	VDE	VDE	VDE
Switzerland	--	SVE	SVE
Belgium	CEBEC	--	--
Sweden	SEMKO	SEMKO	SEMKO
Finland	EI	--	EI
Norway	NEMKO	NEMKO	--
Denmark	DEMKO	DEMKO	DEMKO
Italy	OVE	--	OVE
Netherlands	KEMA	KEMA	KEMA
U.K.	ASTA	HAR	ASTA
U.S.A.	UL	UL	UL
Canada	CSA	CSA	CSA
Australia	SAA	SAA	SAA

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TYPE : 107T51/00
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5.2.2 Signal cable

Length of video : 1.45 m ± 50 mm flying with 15 pin PS/2 D-shell socket

5.3 Tilt and swivel base

Tilt angle : 5° forward and 13° backward

Swivel rotation : 90° leftward or rightward

6.0 Environmental characteristics

The following sections to define the interference and susceptibility condition limits that might occur between external environment and the display device.

6.1 Susceptibility of display to external environment

6.1.1 (A) Operating limits

Temperature : 0 °C to 40 °C

Humidity : 10 to 90% (W/O condensation)

Air pressure : 700 ~ 1100 mbar

(B) Non-operating limits (storage)

Temperature : -25 °C to 65 °C

Humidity : 5 to 95 % (W/O condensation)

Altitude : 300 to 1100 mbar

6.1.2 Transportation packages

A) Carton box

A-1 Size (with pedestal)
496(W)×416(H)×556(D)

A-2 Carton paper : double wall AB flute corrugate board, color brown

Bursting : 19.3 kgf/cm² min

Compression : 600 kgf min

B) Transportation conditions

B-1 Container loading (separated pedestal)

Qty	Container size				
	40'		20'		40' High Cube
	W/ Pallet		W/ Pallet		W/ Pallet
	Yes	No	Yes	No	No
Layers	5	5	5	5	6
Sets / Layer	4	4	4	4	4
Sets / Block	20	20	20	20	24
Blocks / Container	24	24	10	10	24
Total Sets	480	480	200	200	576

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GENERAL PRODUCT SPECIFICATION

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B-2 Transportation standards

Standards		EU / Asia versions PHILIPS's UN-D1400	U.S.A. version NSTA
Drop test	Height	61 cm	61 cm
	Sequence	-10 C for 16 hours, 1 corner, 3 faces Right/Back/Top faces Left/Front/Bottom faces (only for reference)	1 corner 3 edges 6 faces
	Result	- Electrical function OK. - Mechanical function OK. - No serious damage in set.	
Vibration test	Sequence	a. 5-200Hz. 0.25G operating random vibration 30 min/axis, 3 axes b. 5-200Hz. 0.73 packing random vibration 30 min/axis, 3 axes	
	Result	- Electrical function OK. - Mechanical function OK. - No serious damage in set.	
Shock test		For design evaluation only. Half sine shock : 100G, <3m sec. 6 shocks Temp. : 23 C Humidity : 60 % Air pressure : 100 kpa Standard : Mechanical Guideline	

6.2 Display disturbances from external environment

6.2.1 ESD Disturbances

According to EN55024 (also refer to EN61000-4-2 for detail).

6.3 Display disturbances to external environment

The disturbances induced by the display and tolerated by the environment are defined as follows :

6.3.1 Ionizetic radiation

Completely fulfill International Commission of Radio logical Protection (ICRP) requirement 0.5 mR/Hr.
 Actually the set can reach 0.1 mR/Hr.

6.3.2 EMI/EMS

Can comply with FCC part 15,DOC C108.8 and EN55022 B Emission.
 EN55024 Immunity; EN61000-3-2 Current Harmonics; EN61000-3-3 Flicker.
 EMS EN61000-4-3 (80% 1KHz AM modulation) Picture jitter ≤ 2mm.

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TY	DATE	2003-01-07	PROPERTY OF	PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-C.E.	

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7.0 Safety tests

7.1 Dielectric strength (Hi-pot test)

According to IEC 60950, UL 1950 and CSA 22.2 No. 950

7.2 Resistance for protective earthing

According to IEC 60950

7.3 Leakage current

According to IEC 60950, UL 1950 and CSA22.2 No. 950

7.4 Grounding

According to IEC 60950, UL 1950 and CSA22.2 No. 950

8.0 Certifications

8.1 Safety

The monitors comply with the following safety standards:

- IEC 60950
- UL 1950
- DHHS 21 CFR, subchapter J
- CSA-22.2 NO. 950
- EK1-ITB 2000

8.2 EMI (Electromagnetic Interference)

The monitor comply with the following EMI standards :

- EN55022 B Emission
- FCC Part 15
- DOC C108.8

8.3 Fulfil approbation requirements

Destination basis, set can fulfil following requirements:

Countries	Safety	EMI
Germany	TUV, GS	CE
Sweden	SEMKO	----
Norway	NEMKO	----
Denmark	DEMKO	----
Finland	FIMKO	----
U.S.A.	UL, DHHS	FCC
Canada	CSA	DOC
Taiwan	----	BSM1

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9.0 Reliability

9.1 Mean time between failures

MTBF to be calculated according to Military standard MIL-HDBK-217C.

MTBF ≥ 75,000 Hours (Excluding CRT)

$$\text{PRACTICE of MTBF} = \frac{\text{TOTAL HRS (POWER ON) X TOTAL SETS}}{\text{NBR. OF FAILURE SETS}}$$

10.0 Quality assurance requirements

10.1 Acceptance test

According to MIL-STD-105D level II,

AQL : 0.4 (Major)

: 1.0 (Minor)

Customer acceptance : UAW 0377/40 criteria

11.0 Service ability

The service ability of this monitor should fulfil the requirements which are prescribed in UAW-0346 and must be checked with the check list UAT - 0361

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17" V30 GS4 107T5-71K CMTR

TYPE : 107T51/00

BRAND : PHILIPS

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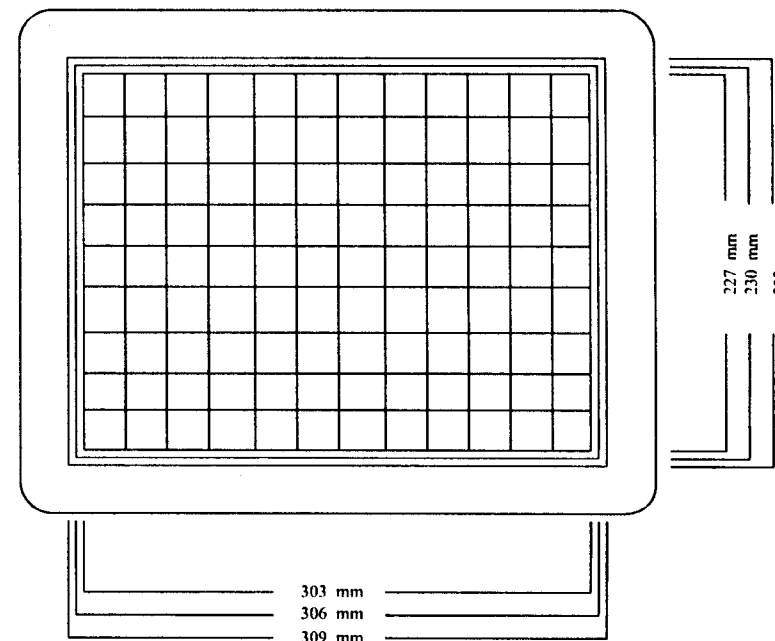


FIG-1 IMAGE DIMENSION

CLASS NO

17" V30 GS4 107T5-71K CMTR

TYPE : 107T51/00

BRAND : PHILIPS

2003-01-07

WAYNE LIN

DATE

2003-01-07

30

590

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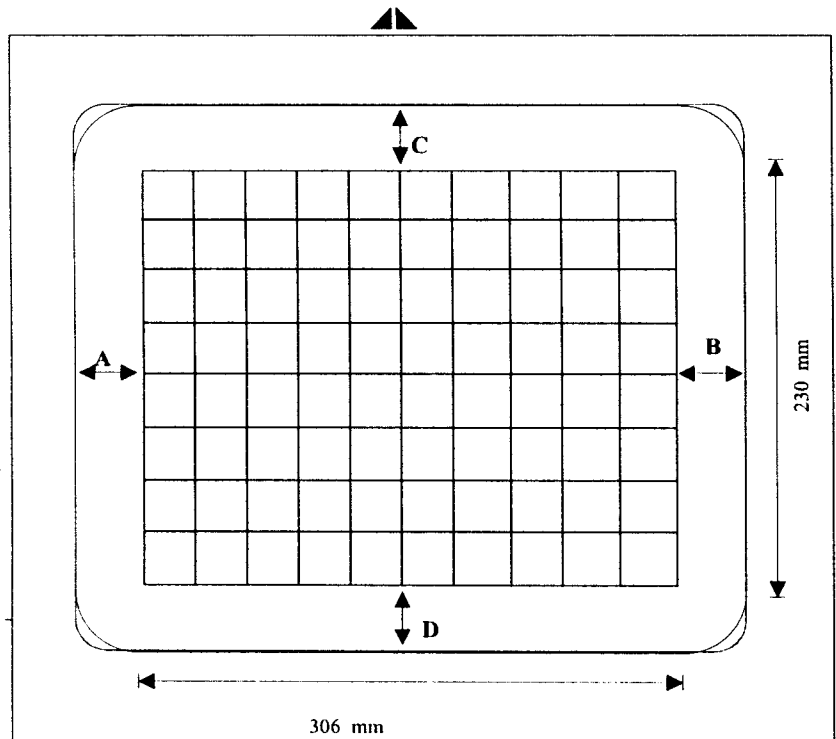


FIG-2 IMAGE CENTERING

CLASS NO.		17" V30 GS4 107T5-71K CMTR									
		TYPE : 107T51/00									
		BRAND : PHILIPS									
2003-01-07											
NAME Wayne Lin		SUPERVISOR									
TY		DATE 2003-01-07									
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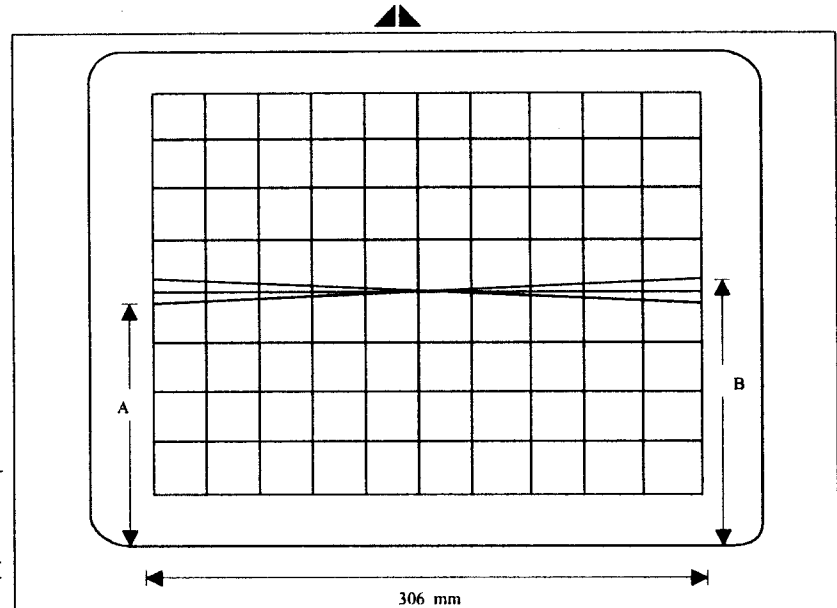
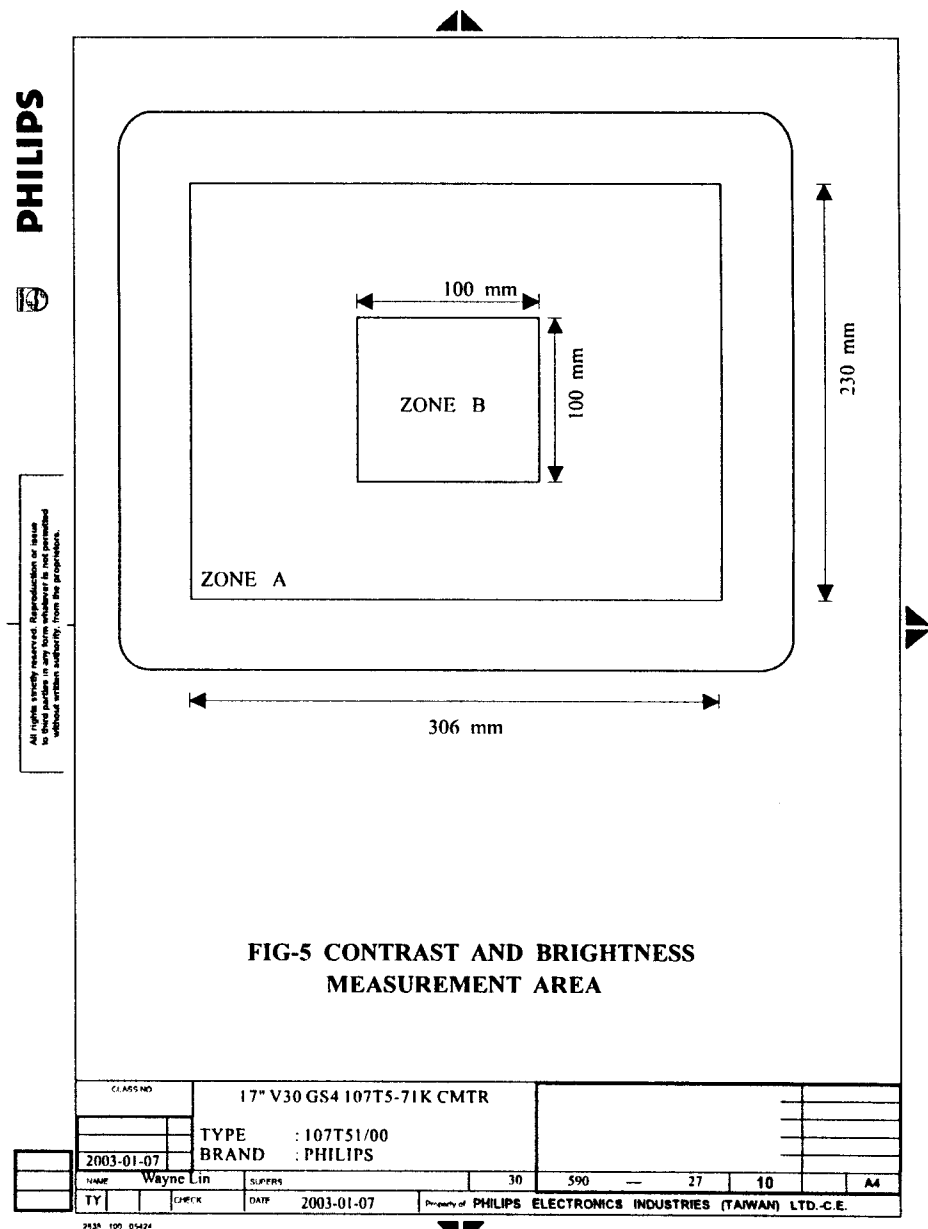
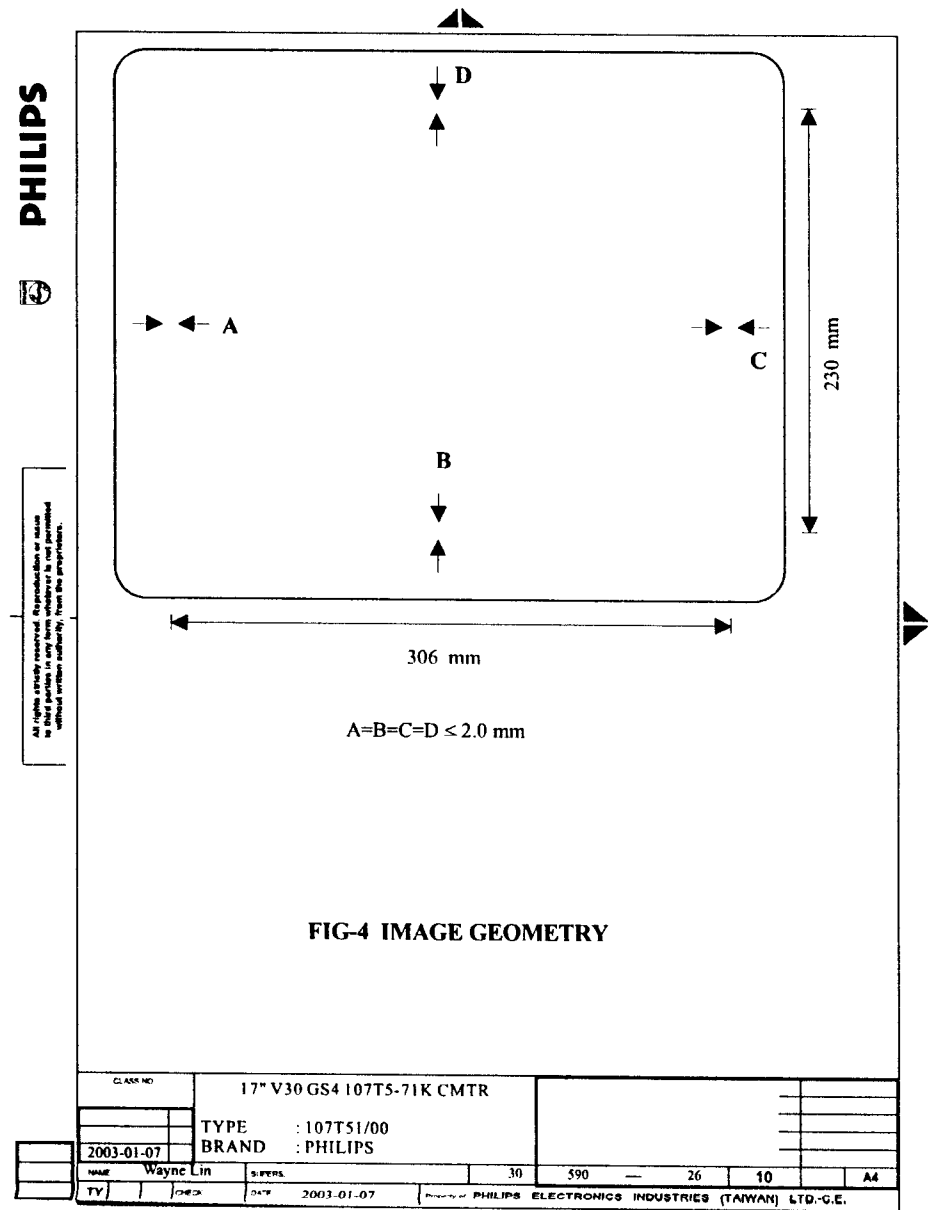


FIG-3 IMAGE ROTATION

CLASS NO.		17" V30 GS4 107T5-71K CMTR									
		TYPE : 107T51/00									
		BRAND : PHILIPS									
2003-01-07											
NAME Wayne Lin		SUPERVISOR									
TY		DATE 2003-01-07									
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ZONE A

ZONE C

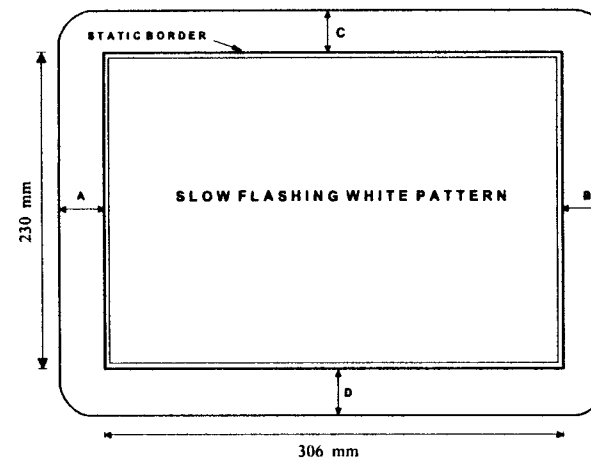
230 mm

306 mm

FIG-6 MISCONVERGENCE

C. ASIDE		17" V30 GS4 107T5-71K CMTR									
		TYPE : 107T51/00									
2003-01-07		BRAND : PHILIPS									
Wayne Lin		SUNSHINE		30		590		28		10	
TV		CHECK		DATE 2003-01-07		Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-C.E.				A4	

254 '6) 25424

 $\Delta A < 1.50 \text{ mm}$ $\Delta B < 1.50 \text{ mm}$ $\Delta C < 1.20 \text{ mm}$ $\Delta D < 1.20 \text{ mm}$

(Δ measured between
flash on / off)

Figure 7

Static EHT regulation distortion pattern

CL 885 NO		17" V30 GS4 107T5-71K CMTR									
		TYPE : 107T51/00									
2003-01-07		BRAND : PHILIPS									
NAME Wayne Lin		SUPERS		30		590		29		10	
A6											
TV		CHECK		DATE 2003-01-07		Property of PHILIPS		ELECTRONICS INDUSTRIES (TAIWAN) LTD.-C.E			

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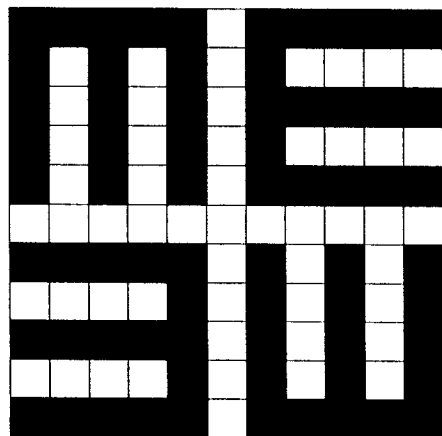
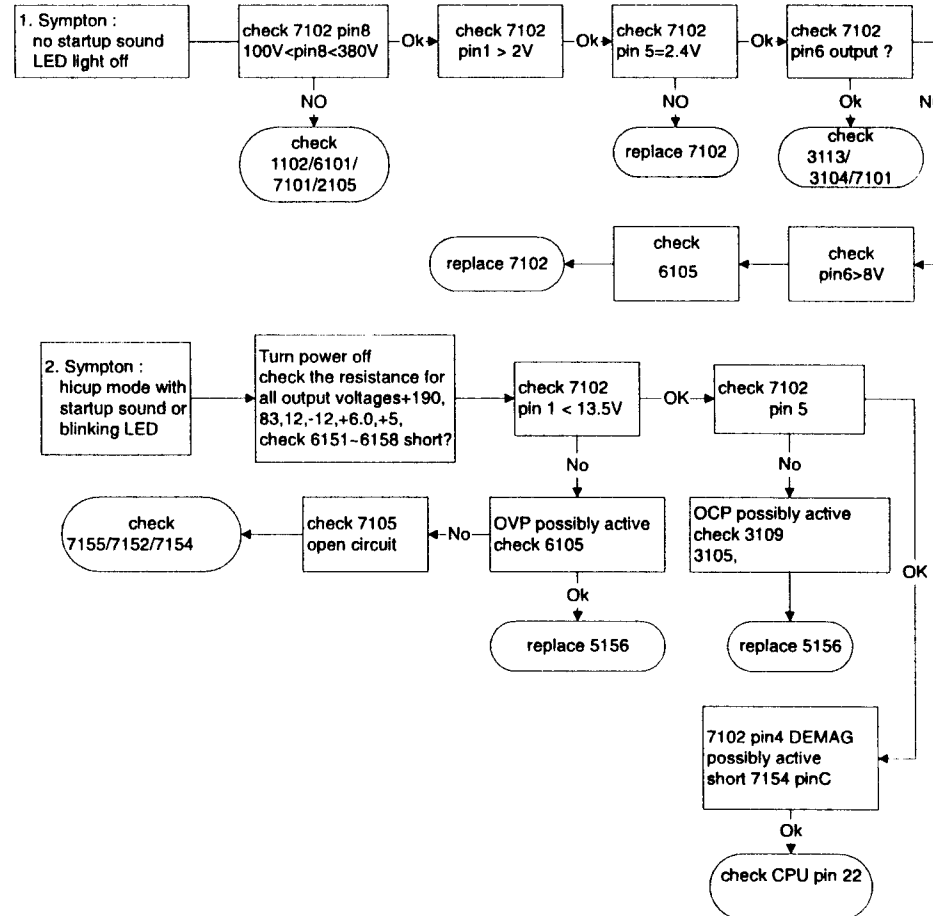


Figure 8

Focus check character

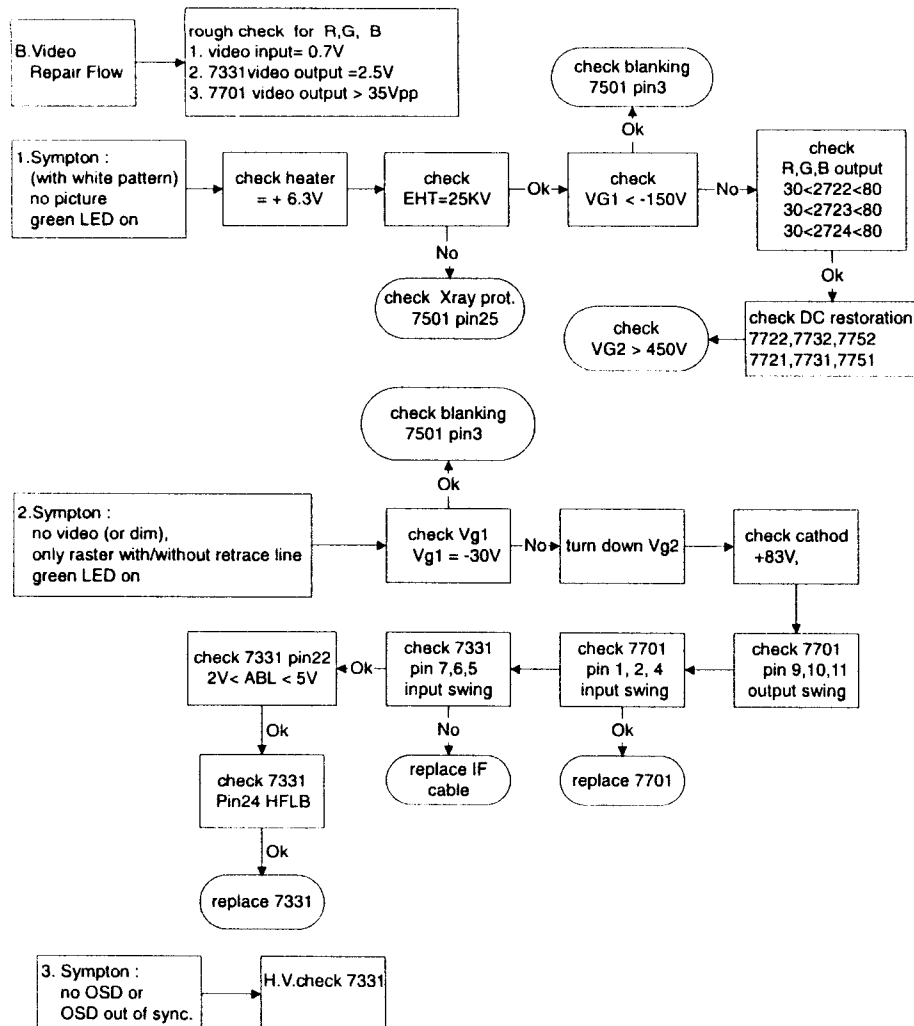
CLASS NO.	17" V30 GS4 107T5-71K CMTR									
TYPE	: 107T51/00									
BRAND	: PHILIPS									
DATE	2003-01-07									
NAME	Wayne Lin	S. PERS		30	500	—	30	10		A4
DATE	2003-01-07									
PROPERTY OF PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-C.E.										

A. Power Supply Failure



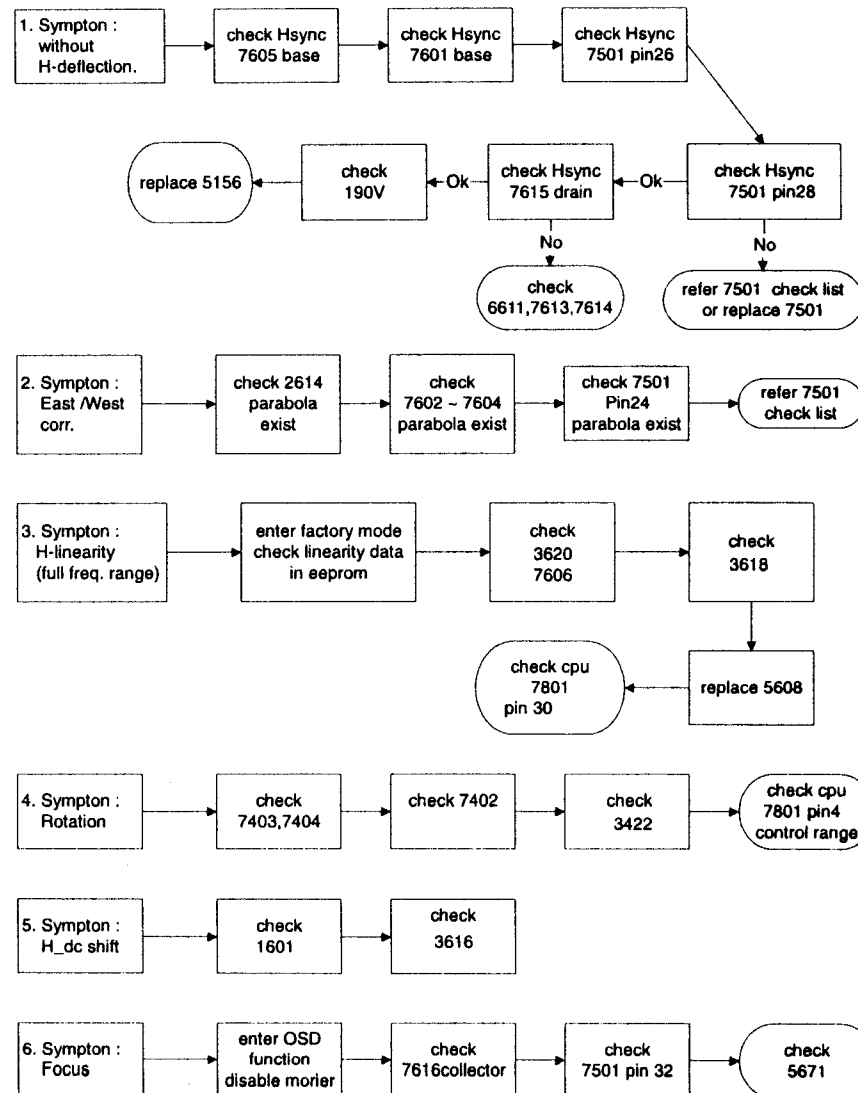
Repair Flow Chart (Continued)

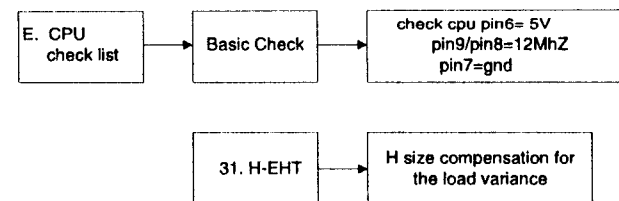
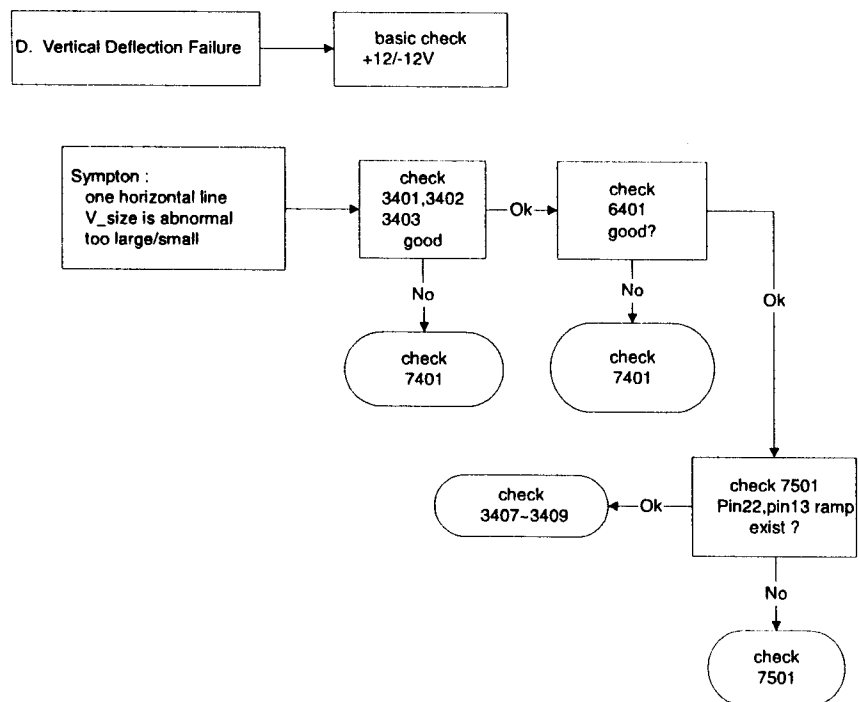
Go to cover page



Repair Flow Chart (Continued)

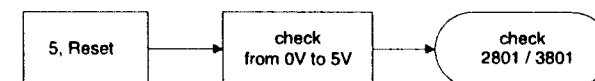
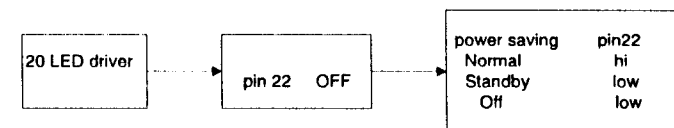
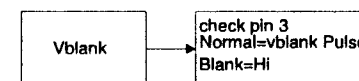
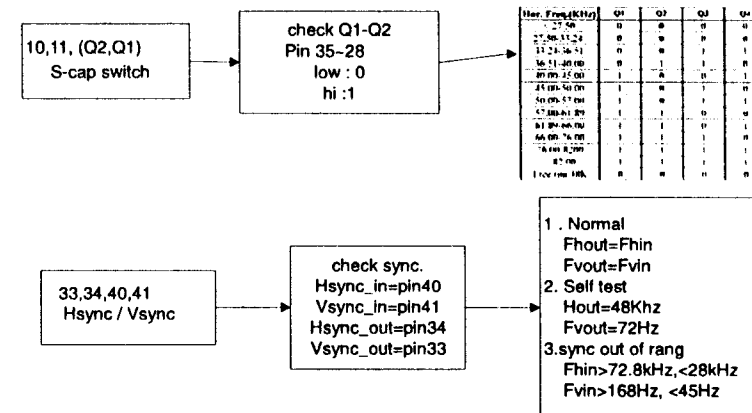
Go to cover page

C. Horizontal deflection
output repair flow :



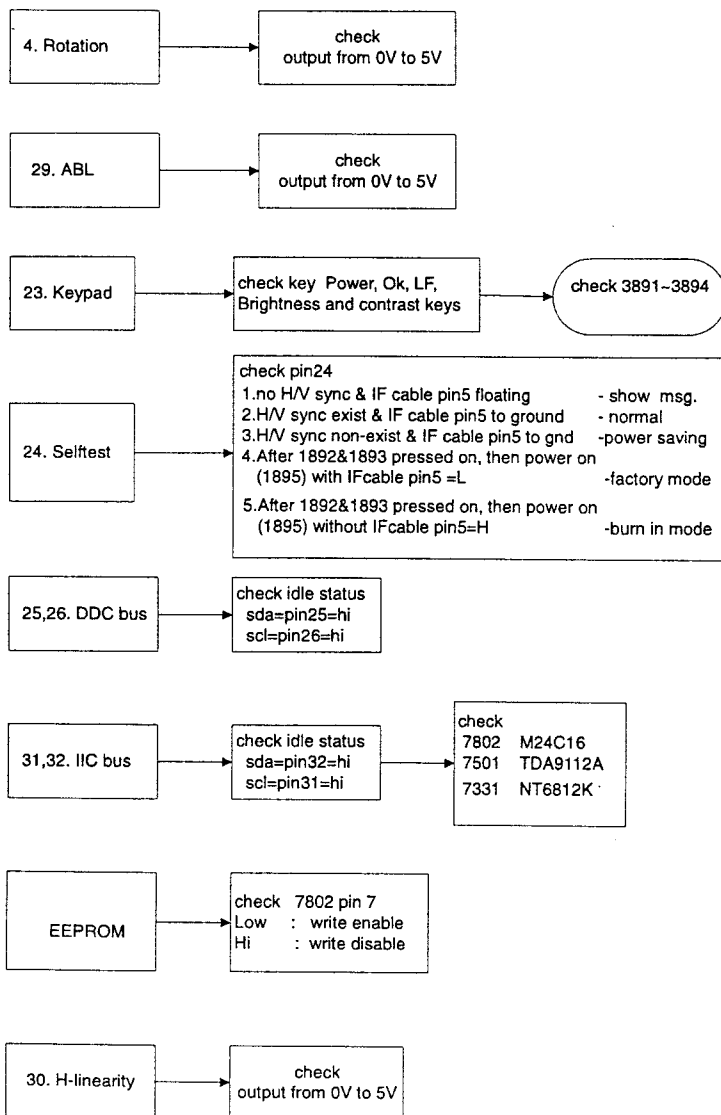
Hour of day (Kilg)	Q1	Q2	Q3
27.00	0	0	0
27.50-31.00	0	0	0
32.00-36.00	0	1	0
36.00-40.00	0	1	1
40.00-44.00	1	0	0
44.00-48.00	1	0	0
48.00-54.00	1	0	1
54.00-60.00	1	1	0
60.00-66.00	1	1	0
66.00	1	1	1
66.00-72.00	0	0	0

Iter. From (KHz)	Q1	Q2	Q3	Q4
27.50	0	0	0	0
27.50-33.54	0	0	0	0
33.54-36.41	0	0	0	0
36.41-40.00	0	1	1	0
40.00-45.00	1	0	0	1
45.00-50.00	1	0	1	0
50.00-57.00	1	0	1	1
57.00-61.29	1	1	0	0
61.29-66.00	1	1	0	1
66.00-76.00	1	1	1	0
76.00-82.00	1	1	1	1
82.00	1	1	1	1



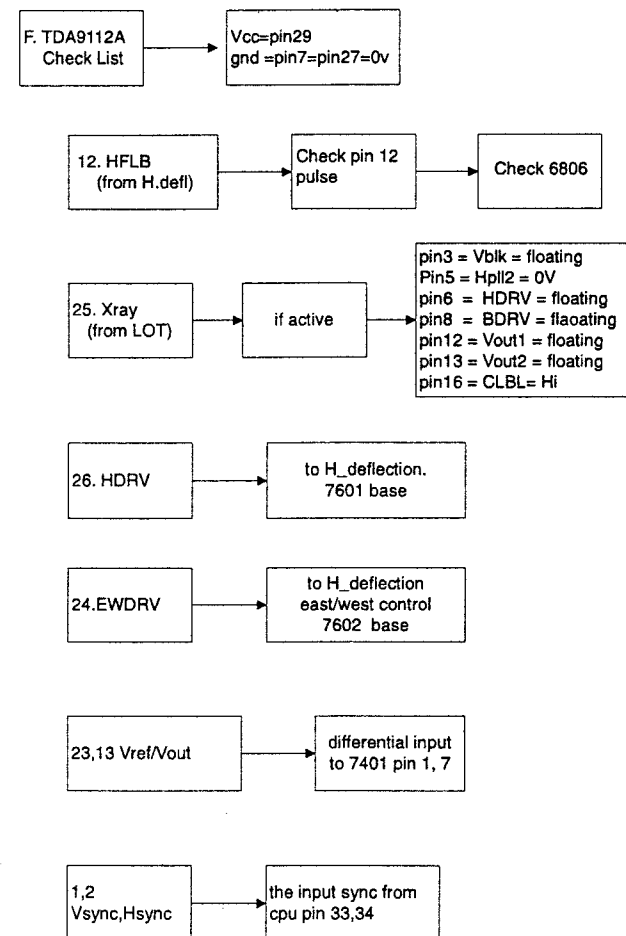
Repair Flow Chart (Continued)

Go to cover page

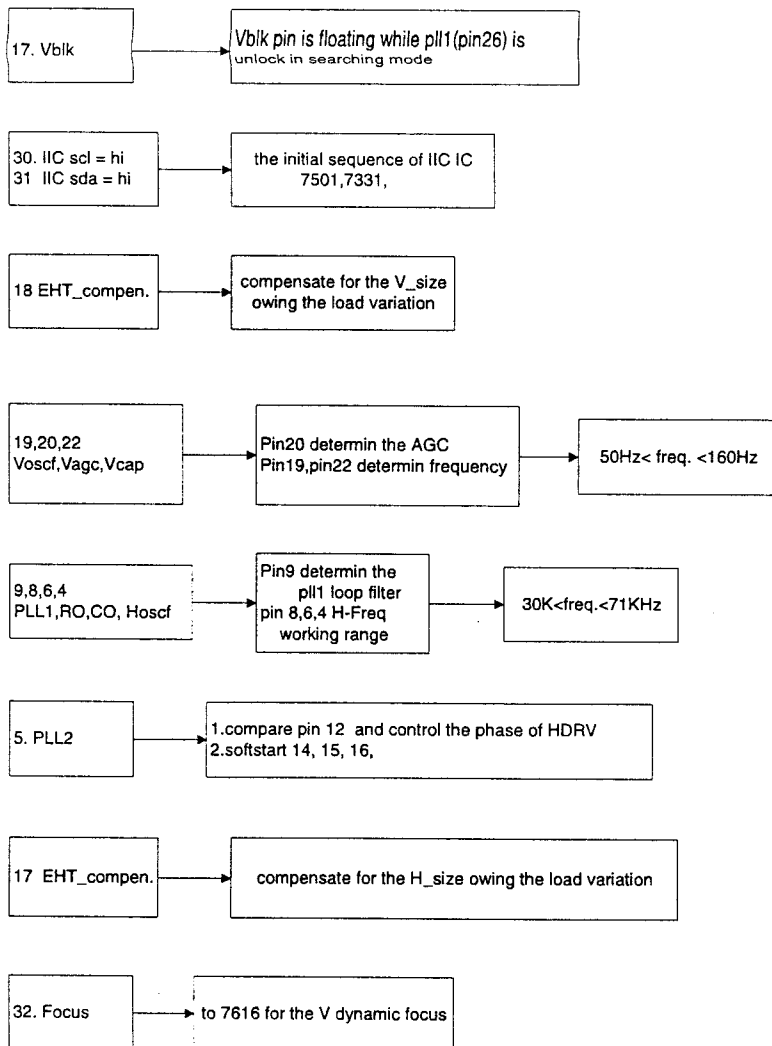


Repair Flow Chart (Continued)

Go to cover page



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Introduction

Philips LightFrame feature enriches the experience of pictures and video on a Philips CRT (picture tube) monitor. This highlighting is done by boosting the brightness and sharpness on a selected region of the monitor screen. Since high brightness and sharpness are not preferred for most standard Windows applications, this special feature will only be active in certain circumstances. So that you can control these circumstances, a special program and icons will be installed in your Windows operating systems.

Notes

Philips LightFrame will only work with monitors that have been built to use this software. Earlier Philips monitors or other manufacturers monitors will not work with this special software. It is recommended that you install this software only on a Philips monitor designed to use it. These monitors can be identified by the LightFrame logo on the front of the monitor.



This software is not designed for use with LCD flat screen monitors.

LightFrame will work with true Windows-based programs and DOS-based programs that operate in a Windows environment. It will not work with DOS-based programs operating only in a DOS environment.

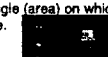
Definitions

The following list contains definitions for frequently used words.

Highlighted window: The selected window on which LightFrame is active.



Highlighted area: The selected rectangle (area) on which LightFrame is active.



Compatibility

This version of LightFrame is compatible with Windows 95 Windows 98

Windows ME Millennium Edition

Windows NT

Windows 2000 Professional Edition

Windows XP

Language Selection

While English is the default language of LightFrame, the User Interface can be set up to operate in Dutch, French, German, Italian, Portuguese, or Spanish.

Installation

- 1) To install LightFrame, place the CD in the CD-ROM drive.
- 2) Next, when the menu of items on the CD appears on your screen, click on 'Install LightFrame'.
- 3) Now, follow the on-screen prompts to properly install the program. The software checks to see if you have a compatible monitor. You must say yes to the license agreement for the software to install.
- 4) After installation, LightFrame automatically loads and the icon appears in the taskbar.

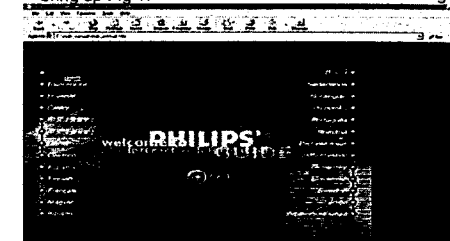
Notes

LightFrame is installed in the Start menu, under Programs. Unless otherwise selected during installation, LightFrame is installed in C:\Program Files\Philips\LightFrame. A shortcut is installed in the StartUp folder and on the desktop. (If needed, LightFrame can be operated manually from the StartUp folder.)

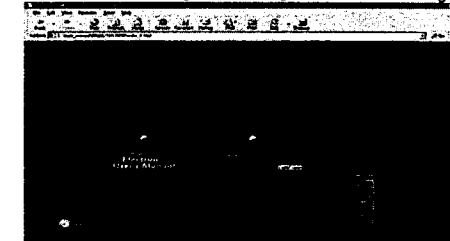
If LightFrame detects that your monitor is not LightFrame compatible, an message appears on the monitor screen. See Error Message number 1 under the heading Error Messages. If you see this message, you can select to abort or continue the installation. However, if you continue the installation, LightFrame will probably not work on the monitor.

1. Put CD-ROM into CD-ROM Drive, bring up Fig 1.

Fig 1.



2. Click one of languages (for example : English) on the screen, bring up, click Light Frame icon as Fig 2



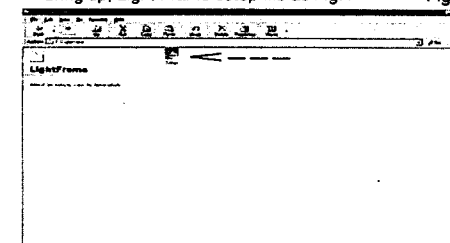
3. Click LightFrame, bring up, click Continue icon as Fig.3

Fig 3



4. Click Next, bring up, Light Frame setup file as Fig.4

Fig 4



Go to cover page

5. Click Yes, bring up Fig.5

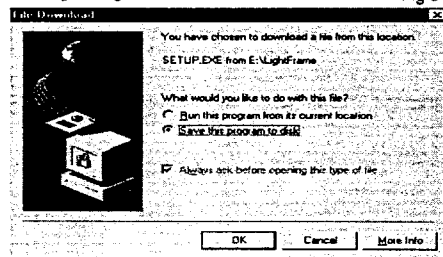


Fig 5

6. Click Next, bring up Fig.6

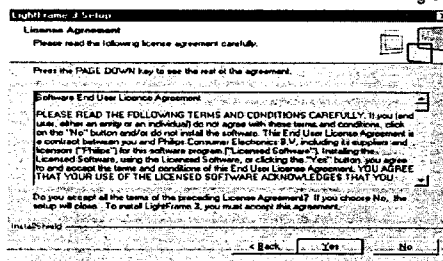


Fig 6

7. Click Next, bring up Fig.7

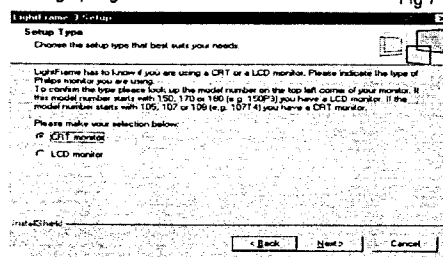


Fig 7

8. Click Next, bring up Fig.8 & Fig.9

Fig 8

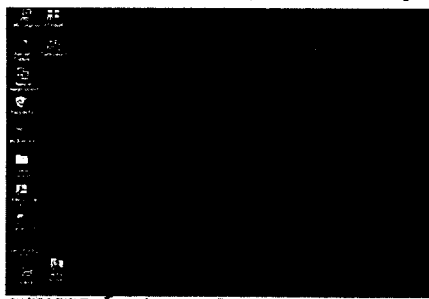


Fig 9



9. Click Finish, bring up LightFrame 3, Fig. 10 on the desktop.

Fig 10



Uninstall

Should you need to remove the LightFrame software, please follow these steps.

- 1) First, click on the Start Menu.
- 2) Next, highlight Settings.
- 3) Then, click on Control Panel.
- 4) Now, click on Add/Remove Programs
- 5) Finally, select LightFrame from the list and then click on the Add/Remove button.

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Operating LightFrame

After installation, LightFrame starts up automatically whenever the computer is started. At system start up, LightFrame checks the selected resolution of the monitor and if the monitor is LightFrame capable.

Icon and Colors

An icon of a monitor represents LightFrame on your desktop. This icon appears as a shortcut on the Windows desktop. LightFrame has three (3) modes of operation: Active, Inactive, and Suspended. The same icon with a different color in its center represents each mode. Active = The LightFrame taskbar as below.



Inactive = The taskbar as below.



Suspended = The taskbar as below.



Notes

An active window must be 100% visible, i.e. it must be on top of all other windows or areas. If any part of another window or area overlaps a highlighted window, LightFrame automatically suspends operation. Once that window or area is removed and the original highlighted window is on top again, LightFrame automatically re-engages and the icon regains its bright green center.

An active window must also be 100% on the monitors viewing area. If part of a highlighted window moves off the monitors viewing area, LightFrame automatically goes into the Suspended mode. If part of a window is off the viewing area, you will not be able to use LightFrame on that window.

Only one window or area at a time can be highlighted.

How To Activate LightFrame

- 1) Click on the LightFrame icon in the system tray. The icon will be changed to Fig.B.



Fig.A

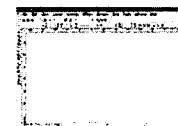


Fig.B

- 2) Guide the mouse to the window you want displayed. As you move the mouse, the cursor changes to a small arrow with a light bulb.



- 3a) Click on the window you want to have highlighted. The brightness and sharpness are automatically adjusted.



3b) If you want to highlight only an area of a window, click on the left mouse button and drag the cursor over the area to be highlighted while holding the mouse button. A rectangle forms around the area. When the area is encompassed by the rectangle, release the mouse button and the area becomes highlighted.



How to Deactivate LightFrame

To deactivate, click on the LightFrame icon in the System Tray of the Taskbar. Click on the icon, as Fig.1 and Taskbar will be changed to Fig. 2 and LightFrame is deactivated.



Fig.1



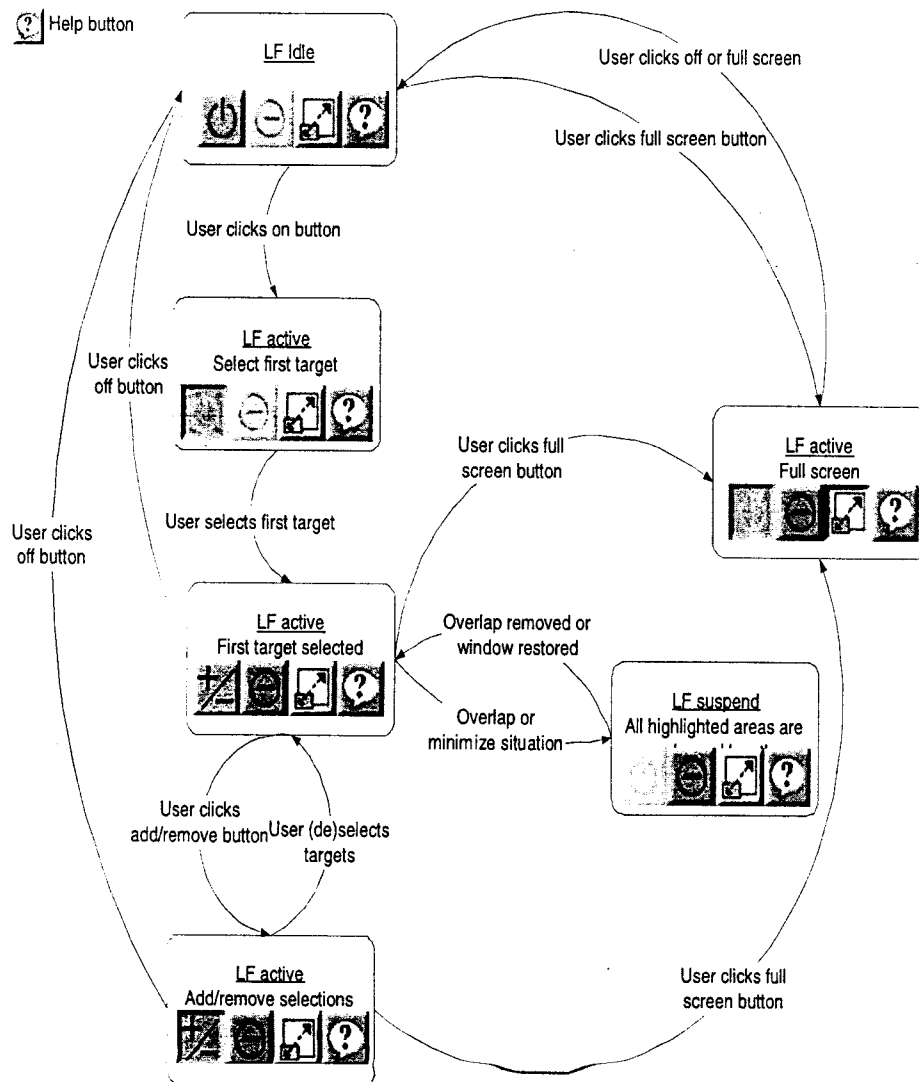
Fig.2

Note

If a highlighted window is closed before LightFrame is deactivated, LightFrame is automatically deactivated.

-  On button
-  Add/remove button
-  Off button
-  Full screen button
-  Help button

LightFrame 3 State and transition diagram Combined with Control bar appearance



0. Warning

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential!

1. Servicing of SMDs (Surface Mounted Devices)

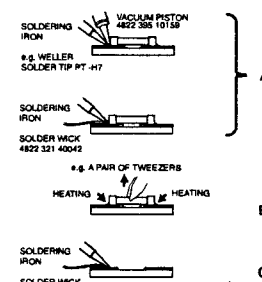
1.1 General cautions on handling and storage

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By means of litz wire and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 1A)

Fig. 1 DISMOUNTING



- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 1 B).
- Remove the excess solder on the solder lands by means of litz wire or a solder sucker (see Fig. 1 C).

1.3 Caution on removal

- When handling the soldering iron, use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should

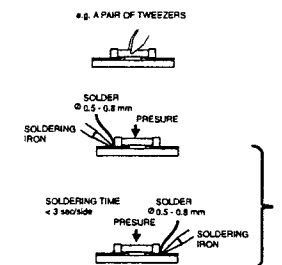
preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).

- The chip, once removed, must never be reused.

1.4 Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig. 2A).
- Next complete the soldering of the terminals of the component (see Fig. 2B).

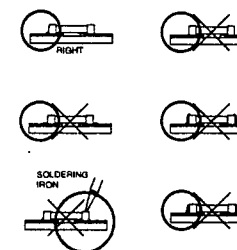
Fig. 2 MOUNTING



2. Caution when attaching SMDs

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 3).

Fig. 3 Examples



Safety test requirements

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All units that are returned for service or repair must pass the original manufactures safety tests. Safety testing requires both Hipot and Ground Continuity testing.

HI-POT TEST INSTRUCTION

1. Application requirements

- 1.1 All mains operated products must pass the Hi-Pot test as described in this instruction.
- 1.2 This test must be performed again after the covers have been refitted following the repair, inspection or modification of the product.

2. Test method

2.1 Connecting conditions

- 2.1.1 The test specified must be applied between the parallel-blade plug of the mains cord and all accessible metal parts of the product.
- 2.1.2 Before carrying out the test, reliable conductive connections must be ensured and thereafter be maintained throughout the test period.
- 2.1.3 The mains switch(es) must be in the "ON" position.

2.2 Test Requirements

All products should be HiPot and Ground Continuity tested as follows:

Condition	HiPot Test for products where the mains input range is Full range (or 220V AC)	HiPot Test for products where the mains input is 110V AC(USA type)	Ground Continuity Test requirement
Test voltage	2820VDC (2000VAC)	1700VDC (1200VAC)	Test current: 25A, AC Test time: 3 seconds(min.) Resistance required: $\leq 0.09 + R$ ohm, R is the resistance of the mains cord.
Test time (min.)	3 seconds	1 second	
Trip current (Tester)	set at 100 uA for Max. limitation; set at 0.1 uA for Min. limitation	5 mA	
Ramp time	set at 2 seconds		

- 2.2.1 The test with AC voltage is only for production purpose, Service center shall use DC voltage.
- 2.2.2 The minimum test duration for Quality Control Inspector must be 1 minute.No breakdown during the test.
- 2.2.3 The test voltage must be maintained within the specified voltage $\pm 5\%$.
- 2.2.4 The grounding blade or pin of mains plug must be conducted with accessible metal parts.

3. Equipments and Connection

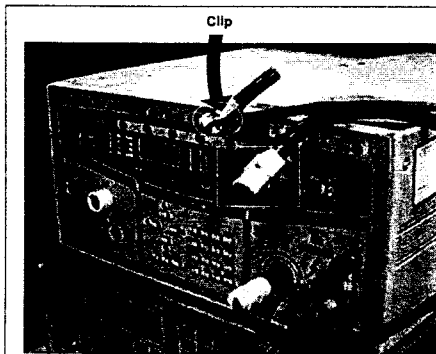
3.1. Equipments

For example :

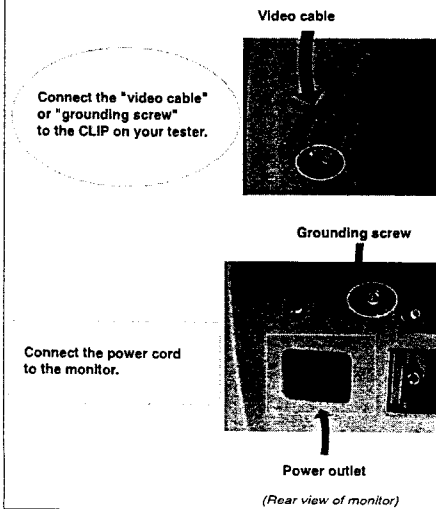
- ChenHwa 9032 PROGRAMMABLE AUTO SAFETY TESTER
- ChenHwa 510B Digital Grounding Continuity Tester
- ChenHwa 901 (AC Hi-pot test), 902 (AC, DC Hi-pot test) Withstanding Tester

3.2. Connection

- * Turn on the power switch of monitor before Hipot and Ground Continuity testing.



(ChenHwa 9032 tester)



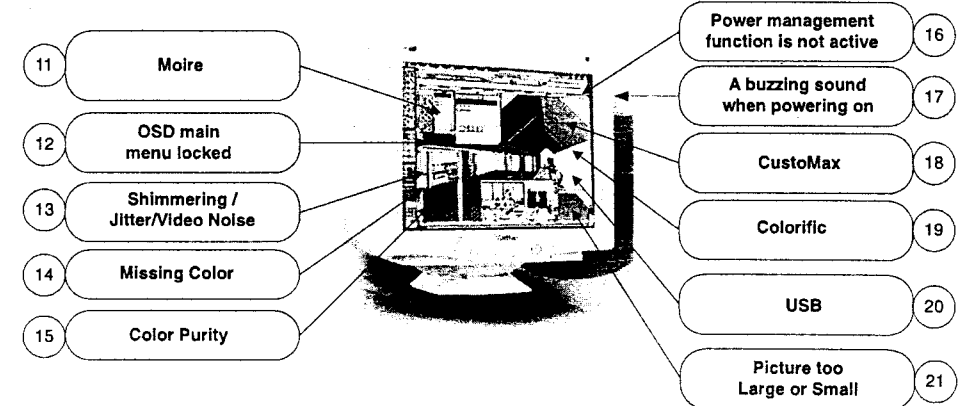
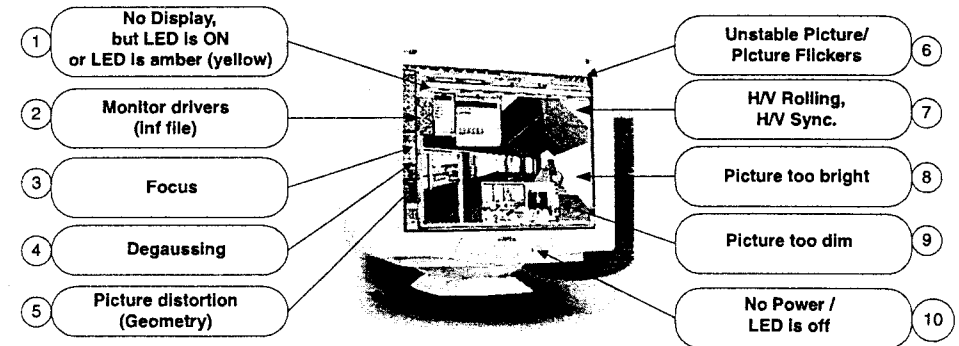
4. Recording

Hipot and Ground Continuity testing records have to be kept for a period of 10 years.

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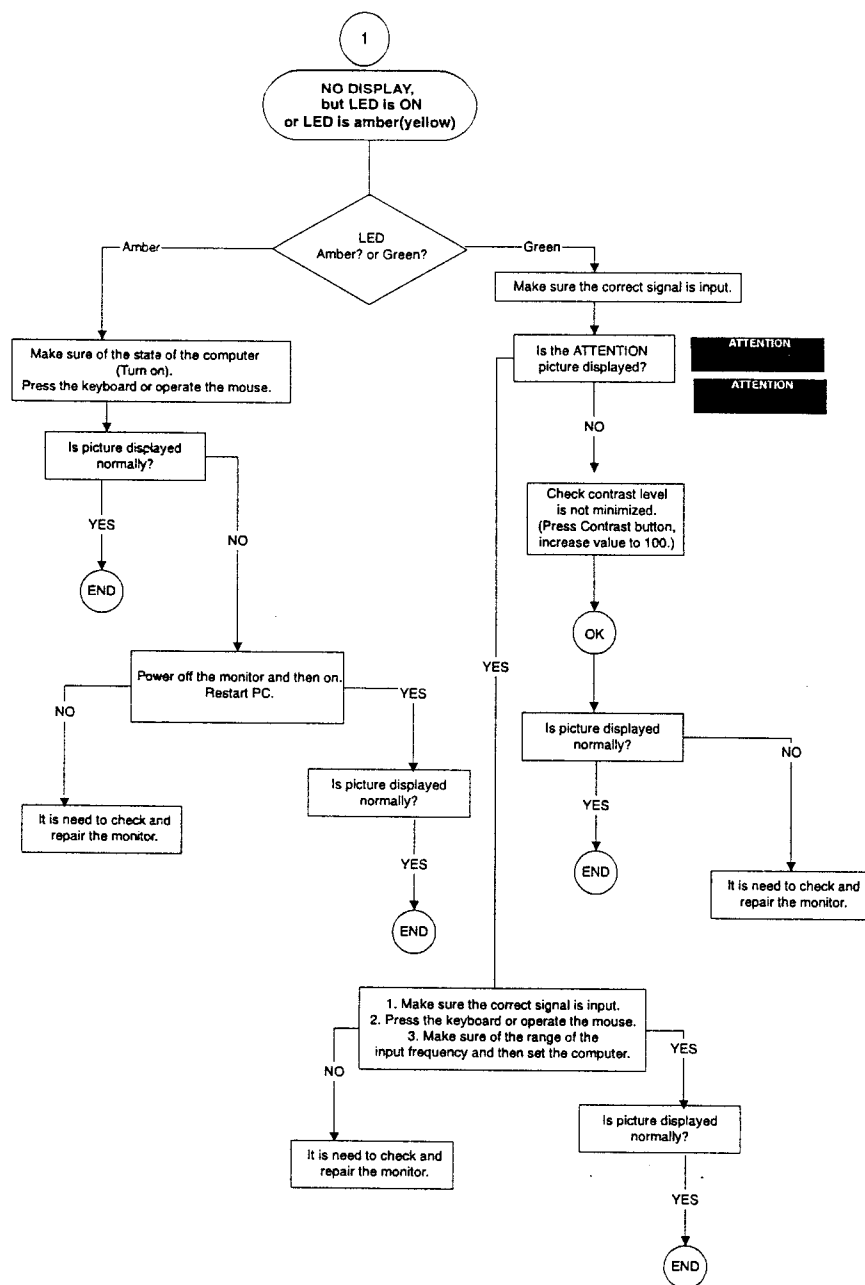
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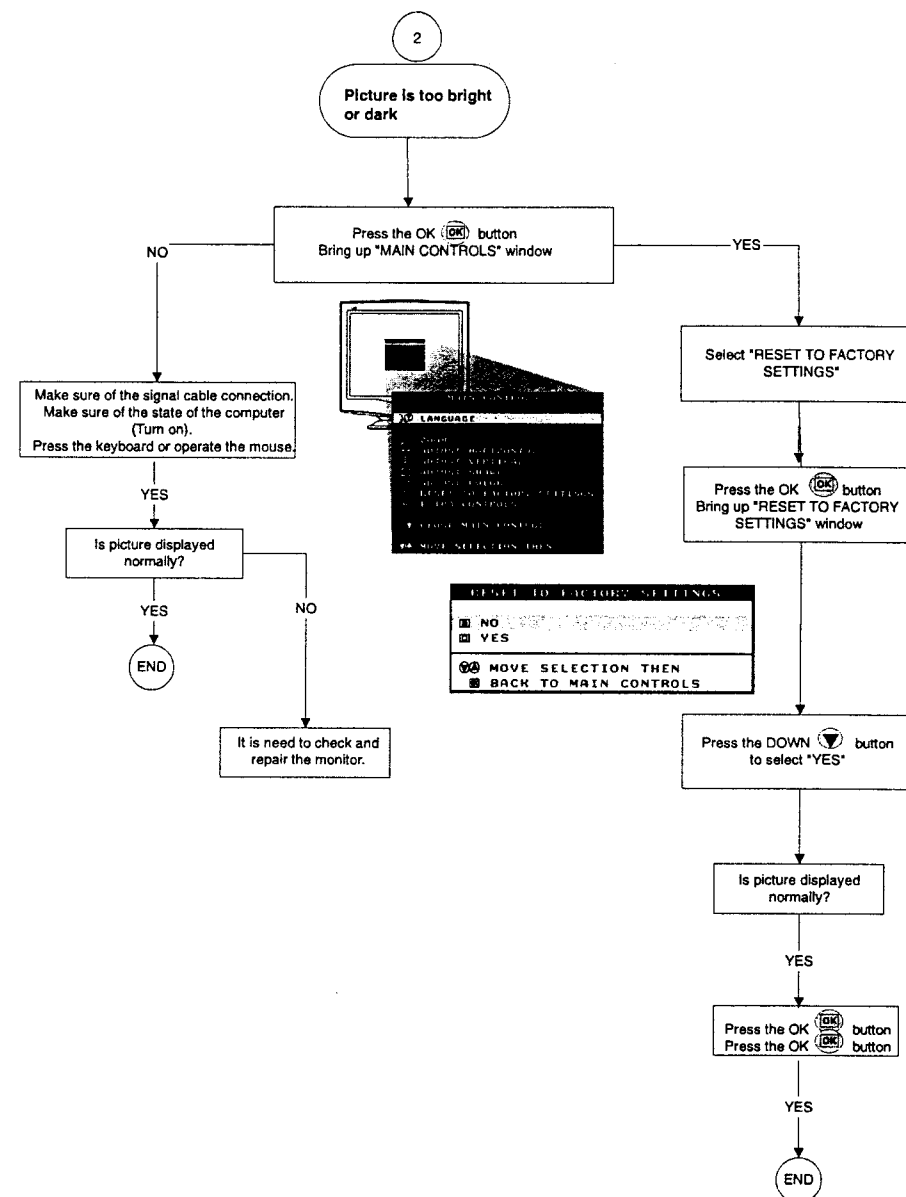


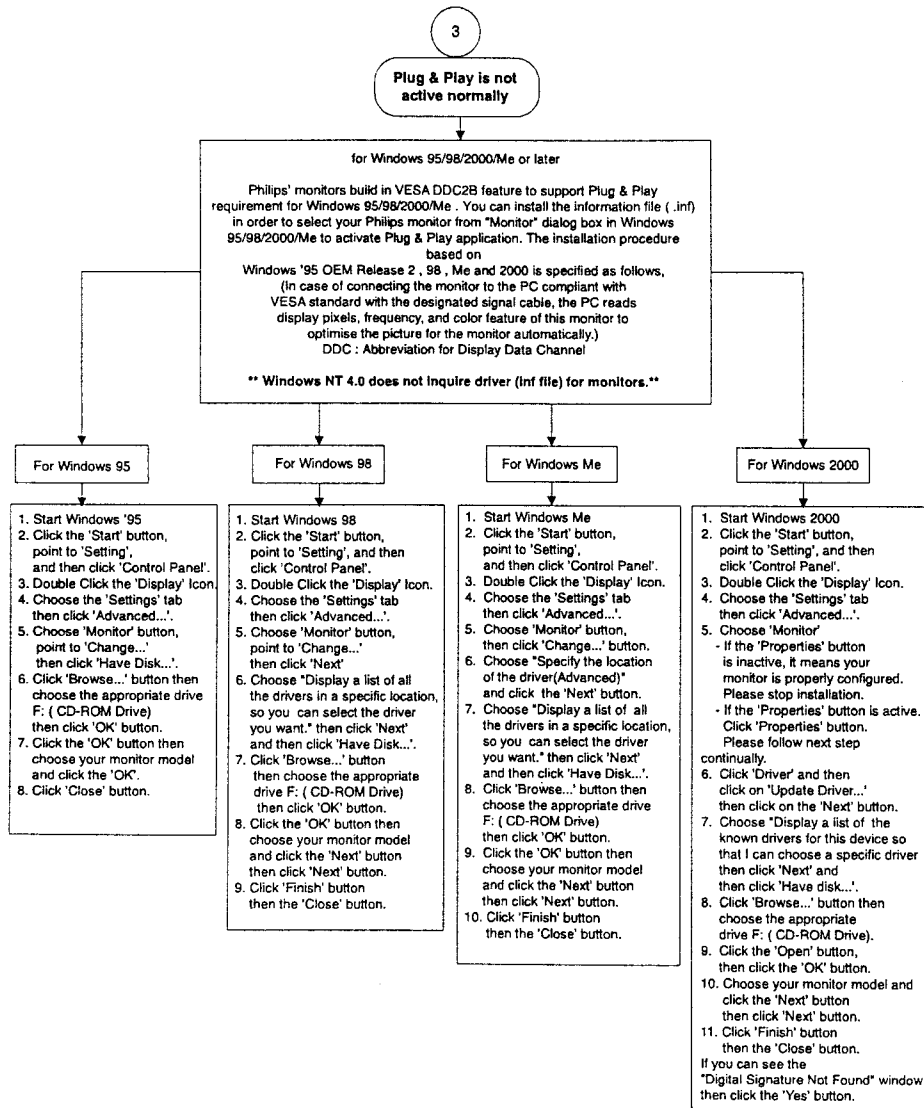
Note : Not all described feature are applicable for all monitors.

General Troubleshooting Guide

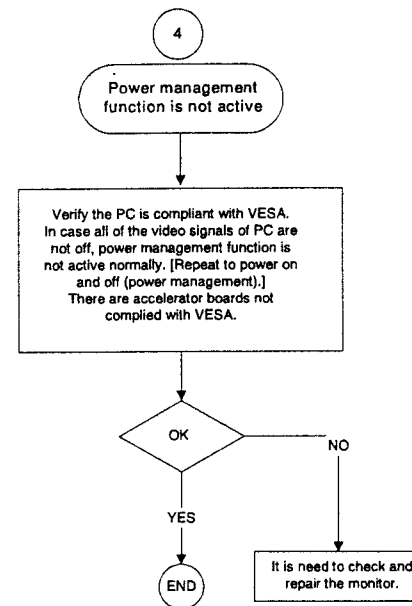


General Troubleshooting Guide

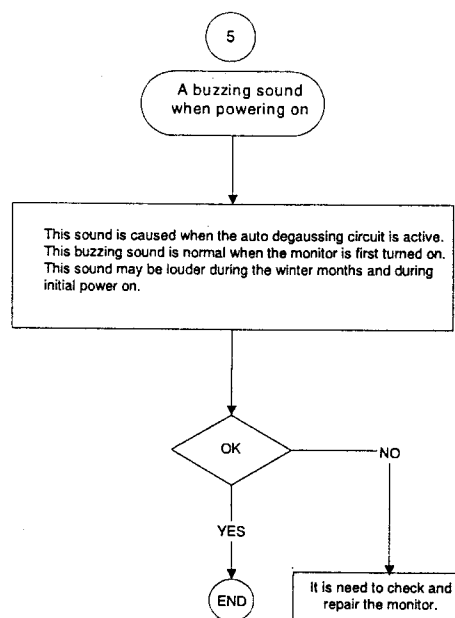




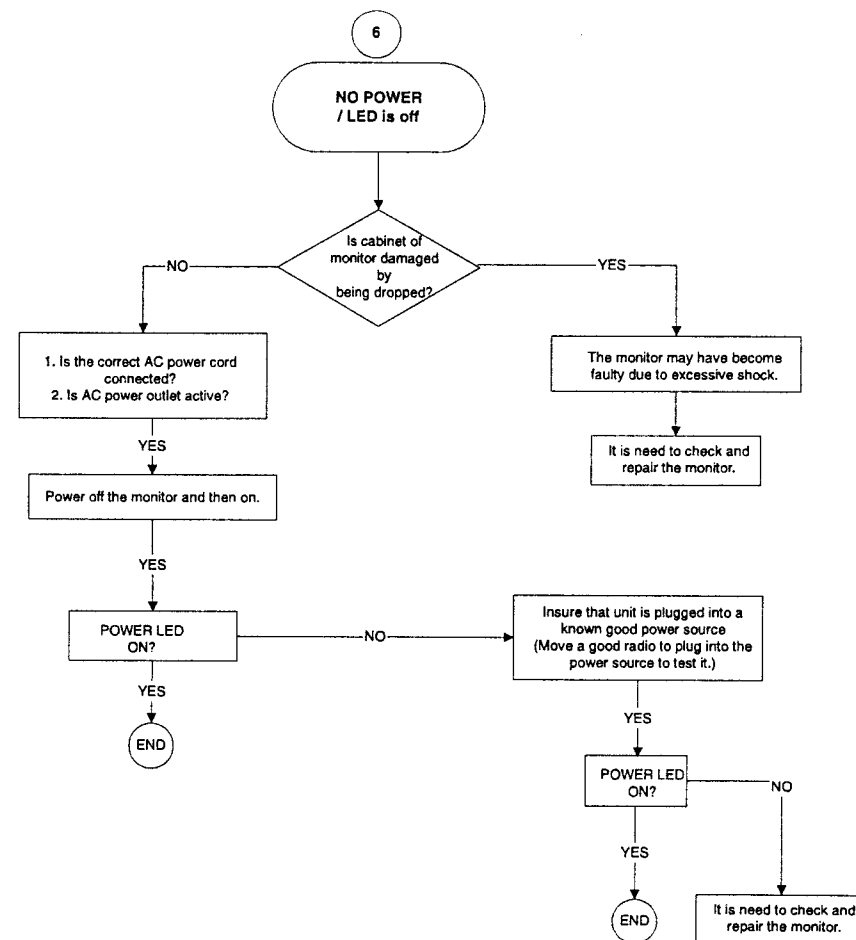
If your Windows 95/98/2000/Me version is different or you need more detail installation information, please refer to Windows 95/98/2000/Me user's manual.



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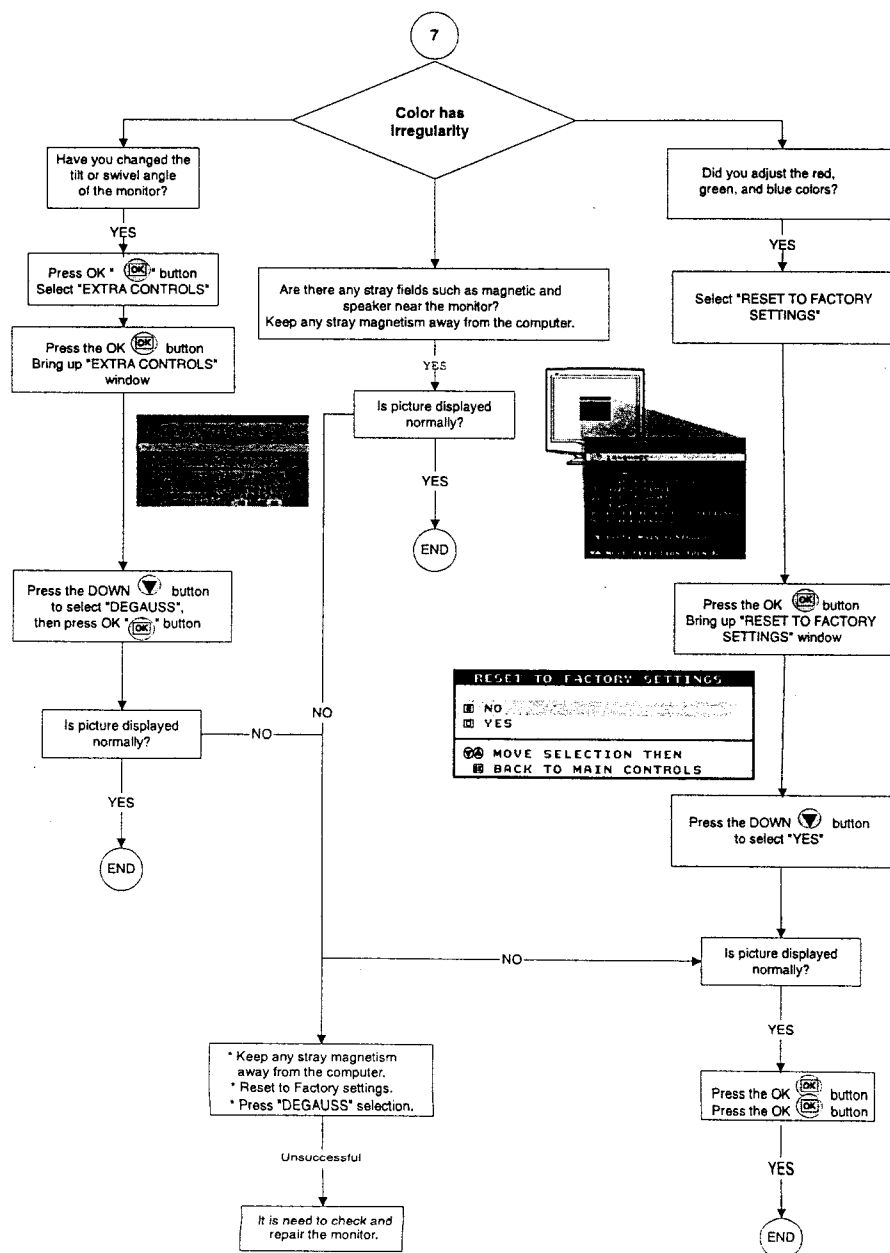


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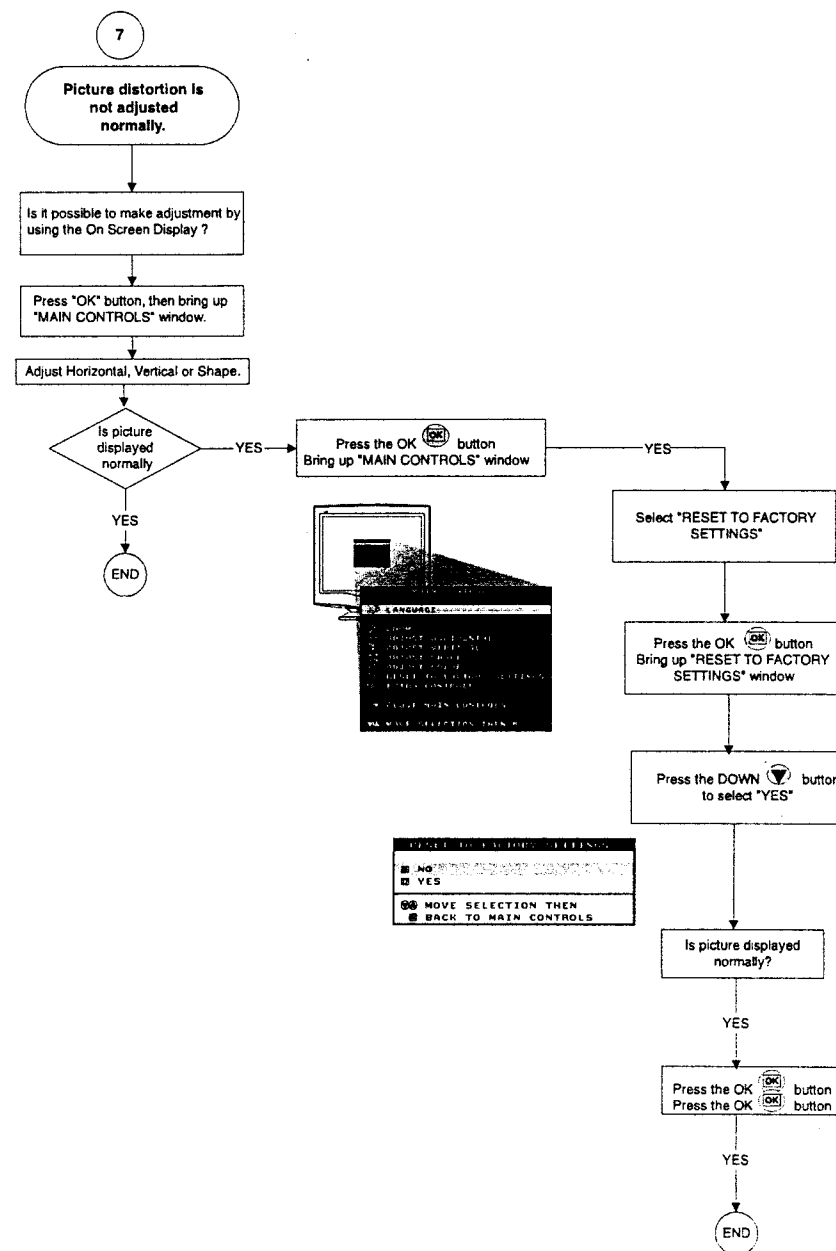
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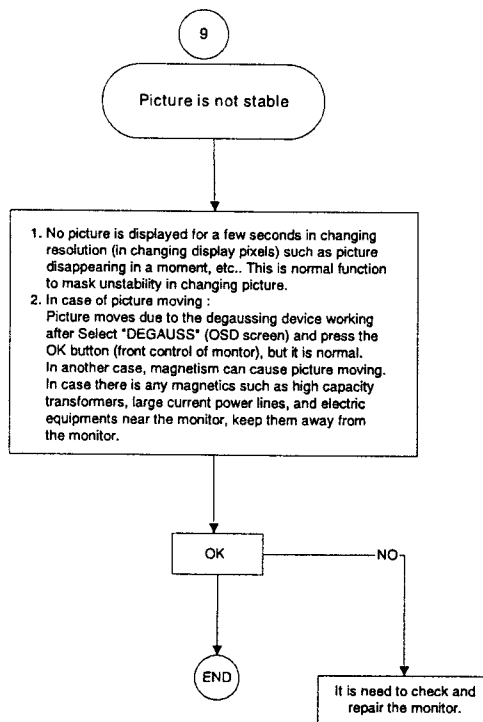


General Troubleshooting Guide

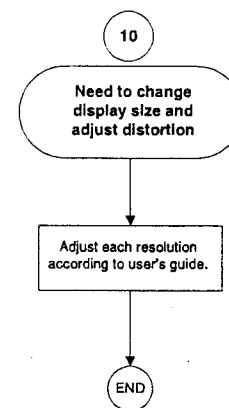
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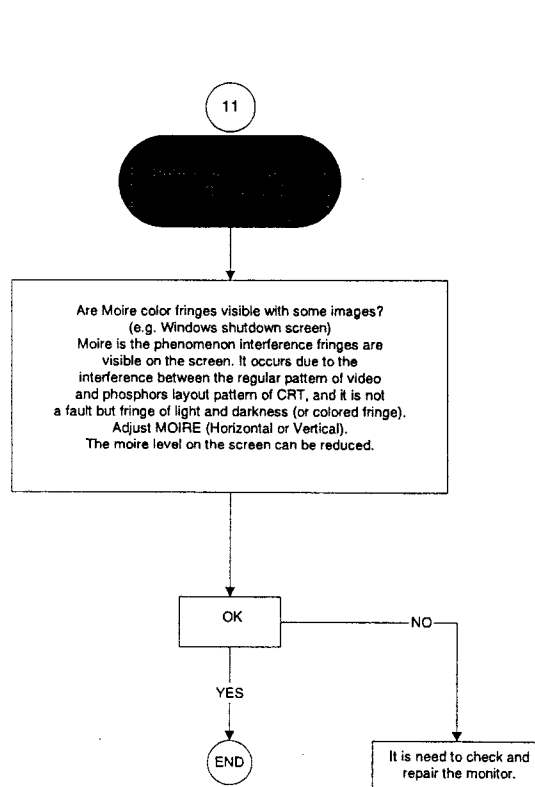


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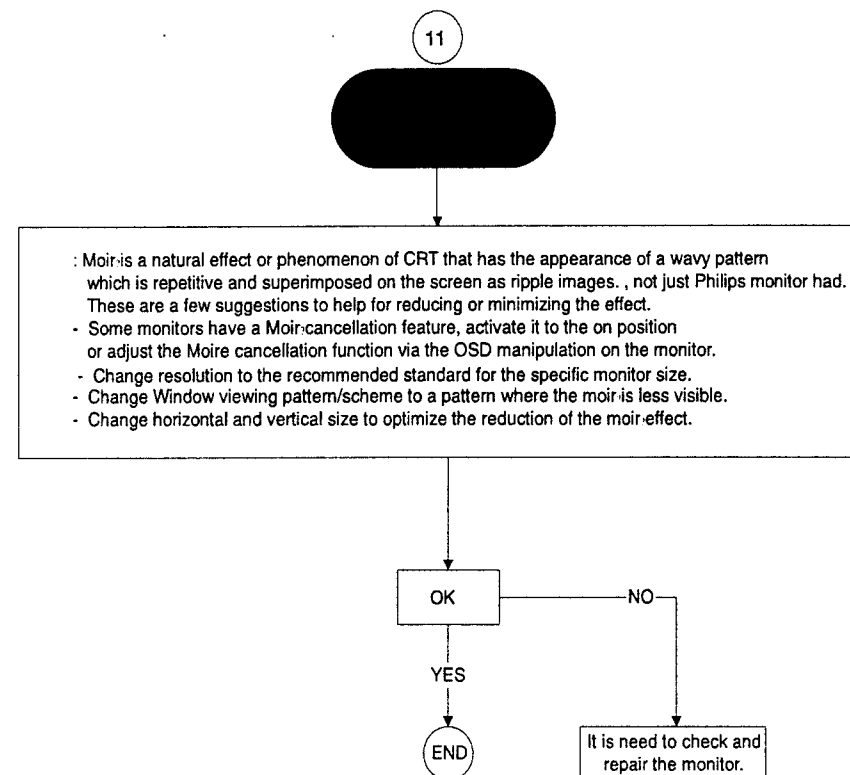
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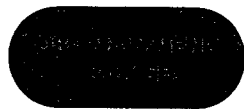


MOIR

A fringe pattern arising from the interference between two superimposed line patterns. In a monitor it comes from the interference between the shadow mask pattern and the video information (video moir, and between the shadow mask and the horizontal line pattern (scan moir). It shows itself as wavy patterns on the screen and becomes more noticeable as monitor resolution increases. Since the video signals varies continuously, little can be done about video moir. Scan moir depends on the horizontal scanning frequency and can be alleviated by appropriate choice of this frequency. Autoscans (MultiSync) monitors, however, which operate over a range of scanning frequencies, may sometimes exhibit moir in certain video modes.

Several sources can act as a catalyzer to produce Moire. They are : The CRT, shadow mask, the electron beam spot size, the resolution, video patterns, and the horizontal and vertical size.

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Press and hold the OSD menu key for about 10 seconds ,
until picture displays "OSD MAIN MENU UNLOCKED"

OK

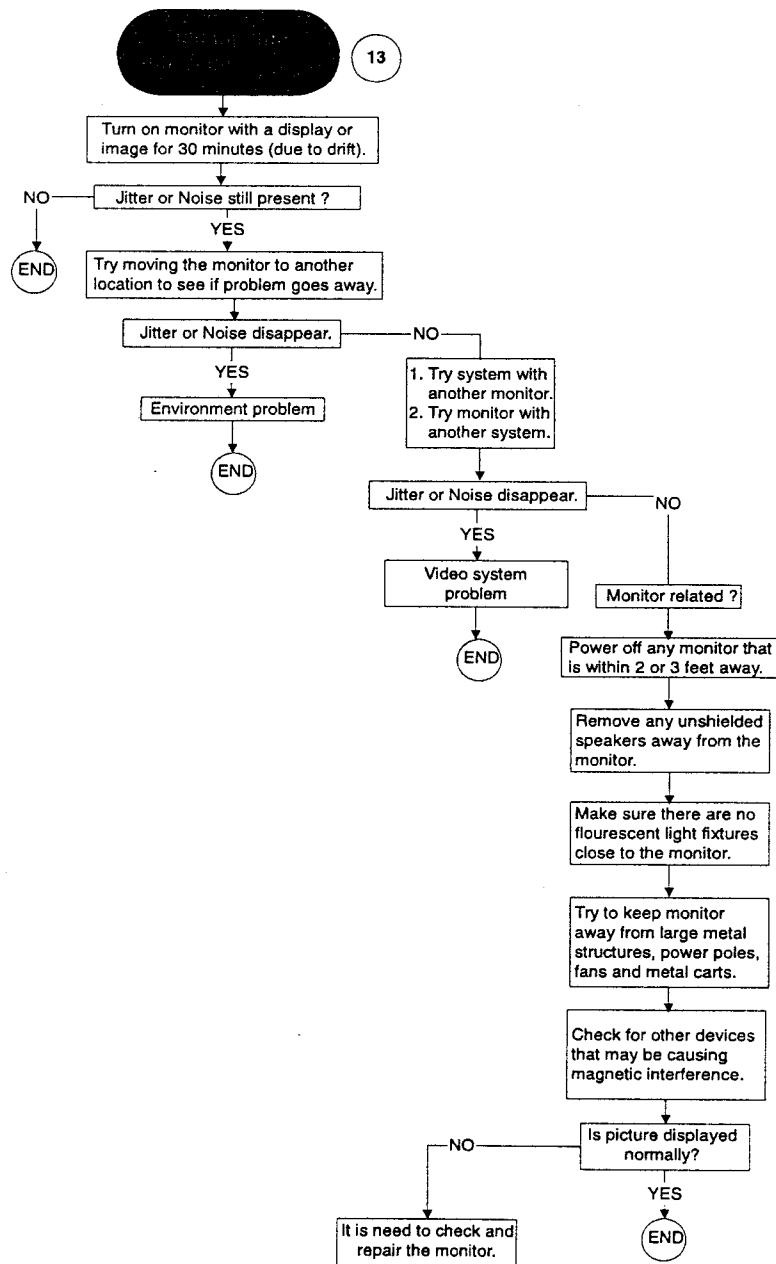
NO

YES

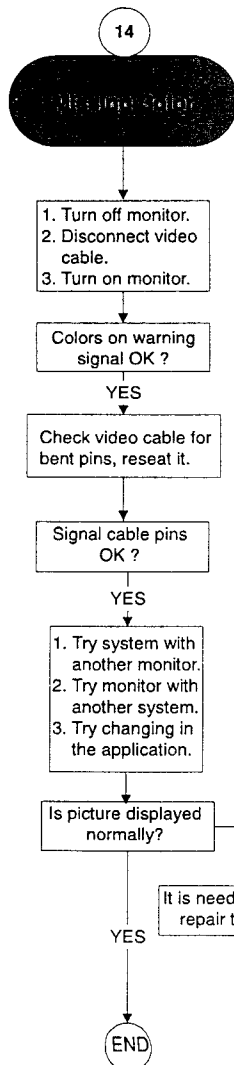
END

Please contact your
dealer/reseller for
more information.

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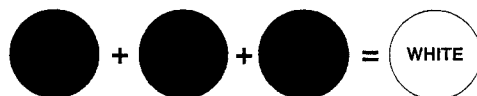


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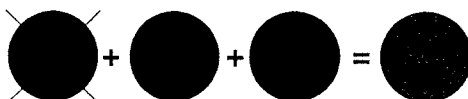


There are 2 easy ways to determine the Missing color problem.

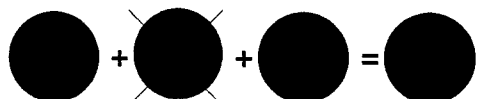
1. View an image that is supposed to be "White".
If one of the colors (RGB) is not functioning, White can not be produced.
2. View an image that supposed to contain Red, Green and Blue.
Color problems will be apparent when one or more of these colors can not be displayed.



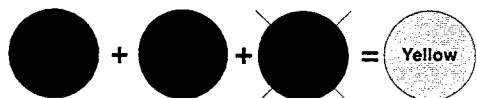
Cyan Color means that the red gun is missing.



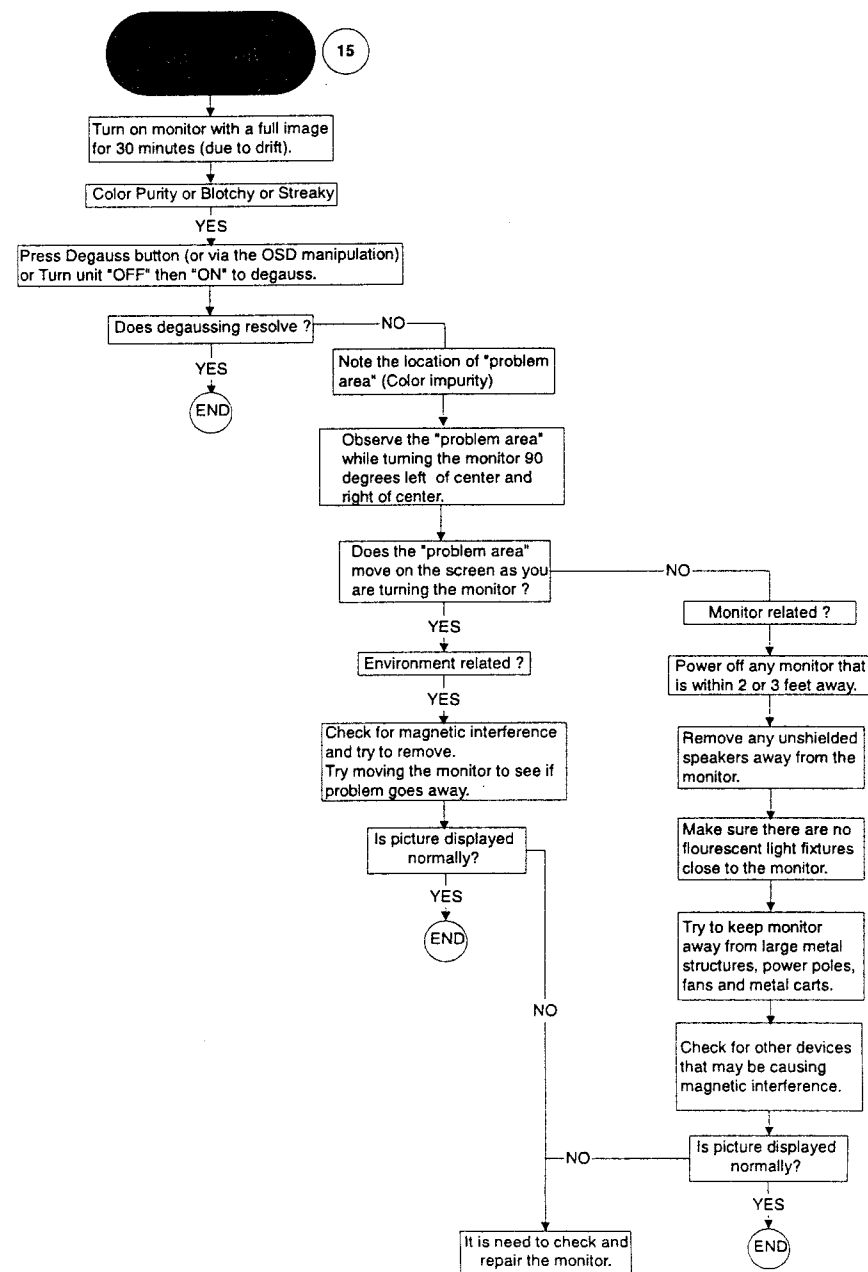
Magenta or Purple Color means that the green gun is missing.

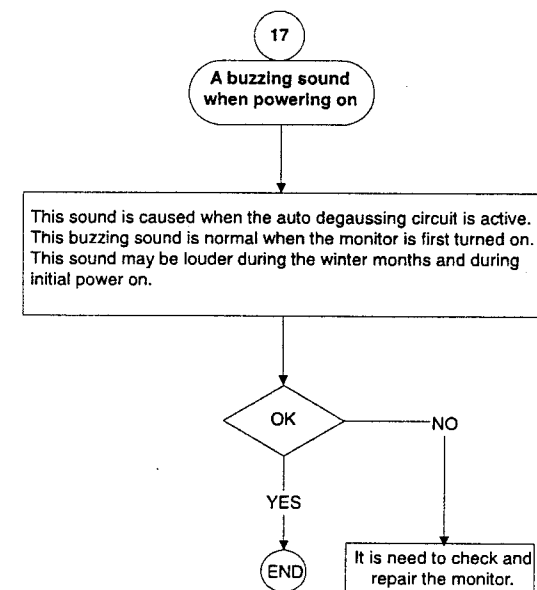
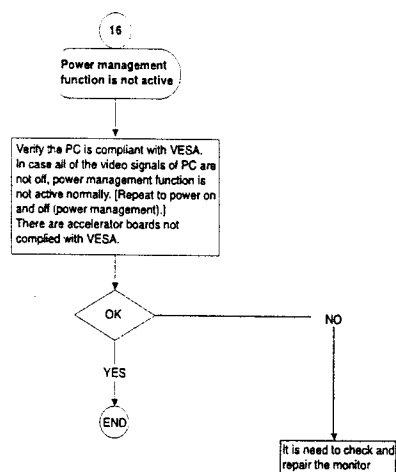


Yellow Color means that the blue gun is missing.



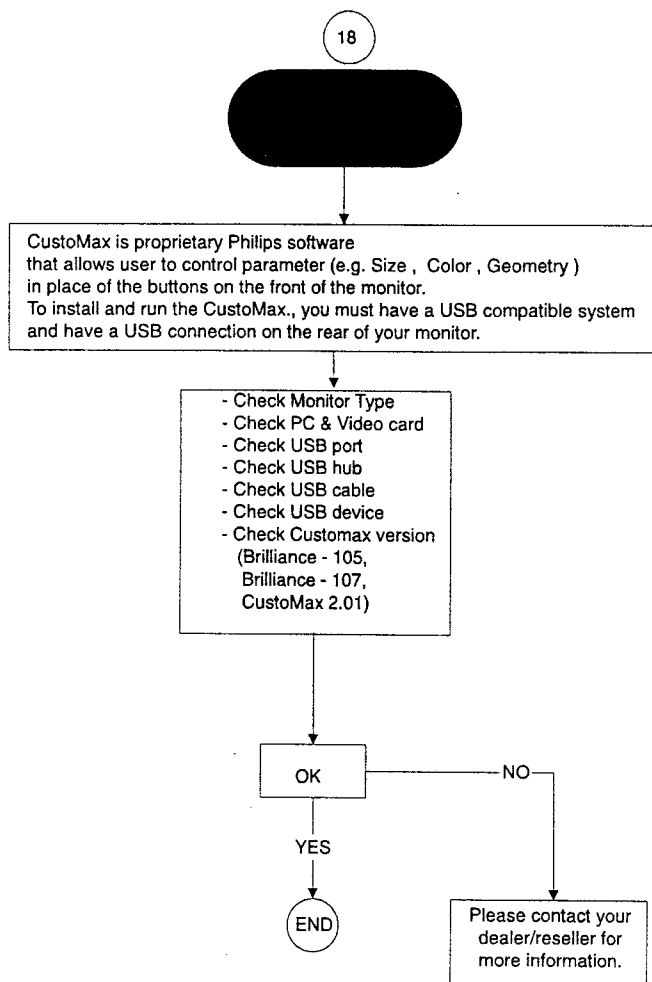
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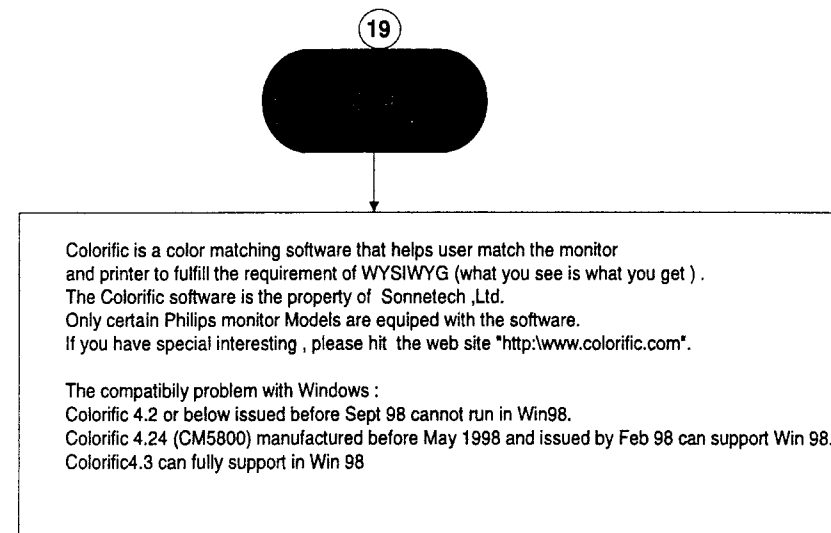


Features:

CustoMax for monitors is a software program for adjusting the screen geometry, color quality, image quality and hardware and software settings of your display.

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USB = Universal Serial Bus

USB automatically determines resources (like driver software and bus bandwidth) required by peripherals.

USB makes necessary resources available without user intervention.

It is designed to meet Microsoft Plug and Play (PnP) specification, meaning users can install, and hot-swap devices without long installation procedures and reboots. It allows 127 devices to run at the same time on the bus.

USB bus provides two types of data transfer speed -- 1.5Mbps and 12Mbps and it can provide a maximum of 500mA of current to devices attached on the bus.

Universal means all peripherals share the same connector.

Serial simply defines devices can daisy chain together.

Universal Serial Bus 1.1, the de facto external connectivity standard for Mac and PC, has picked up the speed after its slow adoption by peripheral manufacturers, users and PC OEMs.

USB 2.0 :

Drafted by Compaq, Hewlett Packard, Intel, Lucent, Microsoft, NEC and Philips, USB Specification version 2.0 will increase device data throughput up to 480Mbps, 40 times faster than USB 1.1 devices.

21



: Reset monitor via OSD menu manipulation
: Adjust the Horz(width) and/or Vert size (height) in the On Screen Display.
: Change monitor timing to work at the recommended resolution.

OK

NO

YES

END

Please contact your
dealer/reseller for
more information.